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THE TREATMENT OF OPEN FRACTURES*

BY

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The principles governing the treatment of open fractures hold good whether the fractures are caused by trauma common in civilian life or by the high-explosive missiles of modern warfare. Certainly war adds many more difficulties to the surgical problems presented by such fractures, as witness the extent of the problem, the severity of the injuries, the delay in bringing in the wounded—adding exposure, dehydration, and loss of blood to accentuate the shock of a painful injury—difficulties of transport and hospital facilities, and finally the especial prevalence of infection, particularly of tetanus and anaerobic infection. That the problem is immense only places it in line with the other problems this country is now facing.

Organization

The first essential to proper treatment is to place an effective organization to deal with each stage and to co-ordinate the entire period of treatment. The great increase of road accidents in recent years presented a similar problem for solution. The British Medical Association report of 1936 and the findings of the Interdepartmental Committee on Fractures formulated four guiding principles necessary for treatment. They were: (1) segregation; (2) unity of control; (3) careful after-care; (4) rehabilitation centres. The creation of a similar organization now both for civilian patients under the Emergency Medical Service and for the war-wounded would seem the first essential. There is nothing new in the problem, and it was solved successfully during the Great War. Robert Jones realized the need, and was able to produce an organization which dealt satisfactorily with the great numbers of severe fractures which came back from France to this country. He insisted on segregation, and, backed by the Advisory Council, he overcame all opposition and formed the orthopaedic centres, where, for the first time, segregation, unity of control, after-care, and rehabilitation were practised. With an organization which controlled in the end some 36,000 beds the fracture problem was solved. All that is needed is to recapture this organization, re-form these centres, and concentrate the patients and the skilled personnel. It is easily possible. It needs only the good will and foresight of those who control the Medical Services of the Fighting Forces and the Civil Medical Service to give us again what we had in 1918. It is interesting to recall Robert Jones's (1925) own words:

"The Great War afforded the most convincing proof of the mishandling of complicated, and even of simple, fractures. In the early period these cases arrived home with appalling deformities. Excessive shortening and malunion were the rule. . . . Men with no experience in this branch of work did the best they could, while men who understood how to treat fractures found the conditions such that it was impossible to obtain satisfactory results. They deplored the fact that . . . continuity of treatment was impossible. Fractures of the femur serve as a notable example. . . . In 1916 the mortality from these [open] fractures amounted to 80 per cent., a large proportion of the deaths occurring on the way to or at the casualty clearing stations. Later, when the Thomas splint was applied almost exclusively, and as near the firing line as possible, we have it on the authority of Sir Henry Gray that the mortality in 1918 was reduced to 20 per cent. This is an astounding and inspiring fact, and led Colonel Crile of the United States Army to say that the Thomas splint did more to prevent death from shock than any other single measure.

"The next great advance in the treatment of fractures at the front occurred when we were able to secure the segregation of cases. The country owes a great debt of gratitude to Major Meurice Sinclair. . . . His femurs came over with scarcely any shortening and with excellent alignment. The problems of segregation and of team work had been overcome, with very admirable results. In England, however, we were not in a position to segregate these fractures when they arrived. . . . Splints were removed too soon and often changed unnecessarily, and the good work abroad was thus sadly interfered with. . . . After a time permission to segregate the fractures was granted. . . . Let me emphasize again that the success in the treatment of fractures during the later phases of the war was due to expert supervision, simplicity of apparatus, team work, segregation, and appropriate after-care. These are the lessons the war taught us: are we going to apply them, and improve upon them, or are we to revert to the bad old way?"

In the recent evacuation of fracture cases from the London area we have, in fact, immediately returned to "the bad old way." Fractures from one segregated centre have been dissipated all over the South Coast. Continuity of treatment could have been maintained by their evacuation to a prearranged centre. Skilled personnel are available, and indeed very willing for work. In the present days the many details of necessary organizations to maintain the continuity of treatment could be worked out quietly between the evacuating hospitals (now casualty clearing stations) and their base hospitals.

First-aid Treatment

MECHANICAL TREATMENT FOR QUICK TRANSPORT

The method employed must be both efficient and simple; it must allow easy and painless access to the wound and protect the limb from harm during transport, and the splints must be easily carried by the stretcher party. For these reasons only two splints are advocated: for the arm the swivel ringed Thomas, and for the leg the Thomas knee splint. The method of application of these splints needs no explanation here. There is only one other splint

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required to complete the stock of first-aid splints. It is a rather cumbersome piece of apparatus, but it should be available at the casualty clearing stations; it is a modification of the Thomas hip splint known as "Jones's abduction frame," and is used for high fractures of the femoral shaft and hip regions. One simple modification of this splint allows free access to gluteal and pelvic wounds—most difficult regions to treat adequately without the frame. The patient, who lies on this splint, can be lifted and moved without pain, without disturbing the fracture, and the dressing can be changed without interfering with the mechanism of fixation. With these three splints traction is easily applied and maintained, and need not be relaxed for any purpose during the period of transport.

While treatment can be satisfactorily maintained on the Thomas knee splint and the abduction frame, it should be stressed that the Thomas arm splint is essentially a transport splint, and its prolonged use will give rise to permanent stiffness of the elbow, wrist, and fingers.

TREATMENT OF SHOCK

Shock is present in varying degrees in all patients with open fractures, and in its initial stage is undoubtedly due to the pain of the injury. The first-aid treatment of shock is to immobilize the fracture by an efficient splint so that the patient can be moved without further aggravating the pain and increasing the shock. To this purpose the application of the Thomas splint and fixed traction will be undertaken with great gentleness and under the injection of 1/3 grain of morphine for an adult. In those patients in whom exposure, dehydration, and loss of blood have added to the shocked state the first step again is application of the Thomas splint under morphine followed by the administration of hot fluid by the mouth, the application of heat, and, if possible, a period of rest.

WOUND DRESSING

Here our aims are twofold—to cover the wound and so prevent further infection, and to conserve the vital quality of the damaged tissues. A dressing of a non-irritating modern antiseptic such as 1 in 2,000 euflavine is adequate to both these aims. The use of strong irritating antiseptics such as iodine defeats the last aim, and consequently these substances are to be avoided.

TREATMENT BY SERA AND DRUGS

The main defence against infection of the wound is by early radical débridement. However, the prophylactic injection of tetanus antitoxin and anti-gas-gangrene serum should be made at the first available opportunity. Recent advances in drug therapy have given us sulphanilamide and its derivatives. These drugs are of the greatest value when once infection is established, but their prophylactic value against infection has yet to be proved.

Surgical Treatment of Wound

This stage of treatment should be carried out as soon as possible after receipt of the injury. Early efficient surgical treatment of open fractures is the only means by which we can prevent infection and so legislate to shorten the period of treatment and save the function of the injured limb. Hospitals for such treatment must be as near as possible to the "danger areas." The stages of surgical treatment of open fractures may be summarized as follows:

1. The preliminary treatment of shock up to the stage at which the administration of an anaesthetic is a safe procedure—this stage should be short and should rarely exceed one hour.

2. The prevention of infection by direct surgery at the earliest moment and certainly within eight hours of the injury. This includes the excision of all dead and dying tissues, ingrained dirt, and debris—the vital quality of the tissues left after débridement rather than the use of any antiseptic being the safeguard against infection.

3. The gentle reduction of the fracture. From this stage onwards the reduction is held either by the extension pieces of an orthopaedic table or by a distraction apparatus.

4. The immediate closure of all wounds treated within eight hours of receipt of the injury, either by suture or by skin graft if a skin defect is present. Wounds treated after this period are left open.

5. The application of a soft protective-pressure dressing to the area of soft-tissue damage in order to prevent oedema and death of the tissues from failure of return of fluids from the area of soft-tissue injury.

6. The final immobilization of the fracture in its reduced position. The principle hereafter to be followed is *rest*, complete and absolute. If the limb is placed in plaster-of-Paris this rest is assured—even the most inquisitive cannot remove a dressing placed under plaster! Plaster-of-Paris is used whenever it can effectively hold the reduction, incorporating, if necessary, transfixion pins through the proximal and distal fragments placed at some distance from the site of fracture. For some fractures splints are necessary—for example, in fractures of the shoulder-joint and some fractures of the shaft of the humerus the shoulder abduction splint has its place. For the pelvis, hip, and some high fractures of the femoral shaft the Jones abduction frame is indicated, while for the femoral shaft the Thomas knee splint is the splint of choice. All these splints allow the application of fixed traction, and without this additional aid it is not possible to hold the reduction of some fractures. But the governing principle should be retained—the wound dressings should be left undisturbed. I believe that it is upon the principle of rest that the success of the Winnett-Orr plaster is founded.

7. Complete rest of the injured limb for at least five weeks. The temperature and pulse rate may be somewhat raised during the early stages of this period, but if the general condition of the patient is satisfactory the plaster or dressings should not be removed. If the *x*-ray picture of the reduction is unsatisfactory it should be remembered that further manipulations undertaken before soft-tissue repair has occurred will most surely inflict additional damage to the limb. Such manipulations should be postponed until soft-tissue repair is sound enough to withstand this additional trauma.

Preparation of Limb for Operation

The undressing of the limb and the removal of the first-aid splint are parts of the surgical procedure, for in every way we must guard against inflicting additional injury. The open wounds are sometimes large and multiple; consequently it is not always possible to shave and wash the limb without further contaminating the wounds. It is safer to cover the limb with a sterile roll of gauze soaked in a suitable antiseptic or in spirit, the areas of the wounds alone being left uncovered. This technique allows us to cleanse the skin in the neighbourhood of the wounds, carry out the débridement, reduce the fracture, and close the wounds by suture, skin graft, or dressing before proceeding to the cleansing of the unaffected areas of the skin prior to the application of the plaster cast or appropriate splint. During the whole of these procedures it is essential that the limb be lifted clear of the table, and for this purpose the traction appliances of an orthopaedic table or a screw traction apparatus of the Böhler type are indispensable.

Anaesthesia

Shock is primarily caused by the pain of these injuries: to relieve the pain is to treat shock. There is no better anaesthetic agent for this purpose than brachial plexus

block by 25 c.cm. of 2 per cent. novocain for the upper extremity and low spinal anaesthesia for the lower extremity, and for patients seen early there is no reason to delay treatment. When the picture of shock has been accentuated by delay, exposure, dehydration, and loss of blood, with a consequent fall of blood pressure to 90 mm. Hg or below, there should be a period of delay to treat such shock adequately followed by anaesthesia by gas-and-oxygen with ether. Spinal anaesthesia in such patients is definitely dangerous.

Débridement

This is another lesson of the last war: "The large-scale experiment of 1914–18 established the failure, relative but none the less unmistakable, of antiseptics. It showed that what determined the fate of a wound was, above all, the vital quality of the tissues exposed to infection" (Leriche, 1939).

In those wounds seen before infection has supervened it is our task to make quite sure of the "vital quality" of the tissues remaining after the débridement. This means an excision of all dead and dying tissues and the removal of all foreign matter from the wound. The main force of trauma in the civilian type of open fracture is inflicted on the skin fat and muscles, and the quantitative sacrifice of non-vital tissues will be in that order. In the injuries caused by the high-explosive missiles of war the skin injury is frequently small and the muscle injury great. In both types the surgical exposure must be adequate to explore the extent of the damage, and the excision of dead tissues must be radical. Fortunately osseous tissue has remarkable powers of recovery; it may be smashed into multiple pieces, but if given a chance it will live. Débridement of bone should never be more than a shaving of periosteum or osseous tissue. Large lengths of bone should never be removed; indeed, it is wiser to amputate than to remove large lengths of the femoral or tibial shaft.

Buried sutures should seldom be left in the wounds after débridement, nor are they necessary. Muscles are damaged almost exclusively in their fleshy bellies where suture cannot hope to repair the damage. Few blood vessels require ligature. With the exception of division of the musculo-spiral nerve in open fractures of the middle third of the shaft of the humerus, nerves are seldom divided in the civilian type of injury. I understand that in war the sciatic nerve is often divided in gunshot wounds of the thigh associated with fractures of the femur. If a divided nerve is encountered in the débridement it should be sutured by the minimum number of stitches of the finest thread or catgut after the fracture is reduced. Such approximation of the nerve ends will save a very tedious exploration at a later date.

Value of Skin Grafts

All skin flaps raised from their connective-tissue beds by the violence of injury must be carefully examined and their vitality proved by demonstrating bleeding vessels from their edges. The débridement of such flaps must be continued until this demonstration has proved satisfactory. In the extremities such excision of skin will invariably leave a defect, for under no circumstance must skin be approximated in open fractures under tension. Often patients have lost areas of skin by the violence of the injury. If such skin defects are allowed to heal by the normal processes of tissue repair, not only is the healing extremely slow, but if the wound is a large one it is associated with permanent deformity in the underlying muscles, with associated loss of function to neighbouring joints. Furthermore, the final scar, particularly if the healing has occurred under plaster-of-Paris, is of tissue-paper texture and a source of subsequent trouble; indeed, many such scars have to be excised and treated by skin grafting at a later date before sound healing has been attained.

For several years I have grafted these skin defects, and I am satisfied with the results. By skin grafting no time is allowed for fibrous-tissue changes to take place in the underlying muscles, and as a consequence the normal elasticity of the muscle is retained. The grafted area has a particularly healthy appearance; fat is often laid down under the graft, and the area stands up to normal trauma very well.

I have followed two methods of grafting: (1) immediately following the original débridement; (2) at the first change of plaster—that is, three to five weeks after the date of injury. Both methods have given excellent results. The second will be the method of choice during war, when speed is an important factor in treatment at the casualty clearing stations. The graft used is the split skin or Thiersch graft, which can be cut with a razor to quite large dimensions after practice. It must be accurately placed on the donor area and held in position by a firm pressure dressing; then it must be left undisturbed for at least a period of five days, when it will have "taken." The dressing may be kept in position for a much longer period, and can be left under plaster and the usual routine treatment for the fracture followed.

In the "delayed" grafting, the appearance of the granulating surface of the wound and the general condition of the patient are the indications whether or not the graft will be successful. If the granulations are healthy and the general condition satisfactory the graft will live. After a limb has been in plaster for a few weeks it may smell very offensively; if the wound when cleaned presents its usual healthy appearance it should be skin-grafted.

Treatment of Infected Open Fractures

In war many patients will receive their first treatment when the wound is obviously infected. The wounds in such cases should be explored and all foreign matter lying free in such wounds should be removed and adequate drainage established. The fracture should be reduced and held in the reduced position. Although I am a strong advocate of the Winnett-Orr method of treatment for such fractures, this method should be under the continuous supervision of the surgeon undertaking the treatment. Complications I have experienced have included severe secondary haemorrhage under the plaster and the development of gas gangrene under the plaster. Accordingly I believe that it is safer to transport such cases to the base hospitals in the Thomas splint and to allow the surgeon at the base full control of the Winnett-Orr method of treatment.

Open Fractures associated with Other Serious Injuries

Sometimes in civilian practice, undoubtedly more frequently in war surgery, the problem of serious abdominal injury is associated with that of open fractures of the extremities. Under one anaesthesia the immediate treatment must be completed. First the extent and nature of the more serious injury must be explored and treated before it is possible to legislate on the line of treatment to be followed for the fractured extremity. The treatment of the abdominal injury may so take charge of the situation that all that is possible for the open fracture is the application of an appropriate splint. With an ideal organiza-

tion such problems are the sphere of a surgical team, and although I remain a firm advocate of segregation of fracture patients I believe that in the "danger zones" the segregation should only be one department of a general hospital containing personnel capable of dealing efficiently with any emergency.

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THE INTRA-UTERINE DEVELOPMENT OF RESPIRATORY EFFORT*

BY

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The attempt to explore a subject so well worn as the regulation of respiration by approaching it from a new angle is admittedly a daring one; but a fresh approach seems to be the only excuse sufficient to justify the effort. In the present introduction, therefore, I shall put before you some glimmerings on the matter, as a crude attempt made to build it up from the developmental standpoint: developmental not in the philogenic but in the ontogenetic sense—that is, by studying the phenomenon as it gradually unfolds in the life of the mammalian foetus to see what sort of picture we obtain. Study of the regulation of breathing demands an understanding of the phenomenon of respiration, and as that appears to be bound up with the essence of movement itself you must bear with me if I start at the very beginning.

Stage I: The Initiation of Movement

The first neuro-muscular movements observable in the sheep foetus appear on the thirty-fourth day of foetal life—not quite a quarter of the way through pregnancy, which in the sheep is normally about 147 days. The foetus is perhaps the size of the thumb-nail, but it is large enough to admit of the appropriate stimulation of the sensory fields which correspond to the endings of individual nerves. The very first movement to take place is obtained from stimulation of the area just over the lip and under the eye: this corresponds to the position to which the maxillary branch of the trigeminal nerve has grown. The movement obtained is a slight lateral one of the head, and appears to be asymmetrical because the stimulus is asymmetrical: in the next few days the nerve grows down to the snout, at which time stimulation of that organ (involving the nerves from both sides) produces asymmetrical throwing back of the head.

It is interesting at the very outset that a nerve so intimately connected with respiration as the maxillary branch of the trigeminal should be the first to evoke movement.

Stage II: The Earliest Rhythmic Movement

Within the next week, or even the next three or four days, the capacity of the foetus for movement has advanced in quite a number of ways, of which four may be singled out: (1) the sensory area, stimulation of which can evoke movement, becomes much enlarged; (2) the adequate stimulus alters in nature; (3) the extent of the response becomes greater; (4) the response becomes rhythmic. To consider these in a little more detail:

1. Not to go further than the trigeminal nerve, the maxillary branch has now come to innervate a much greater area by, say, the fortieth day than was the case on the thirty-fourth. Moreover, the supra-orbital branch of the ophthalmic division has come into play. Thus, from considerable areas around the snout and eyes stimulation by a glass rod or a faradic current will evoke a response.

2. The repercussion of the enlargement of the sensory field means that a much less intense stimulus if applied to the enlarged area will evoke a response. Thus a drop of saline falling in the eye from no more than a centimetre will initiate movement; or, *in utero*, a current set up by the injection of warm saline into the sac, if it impinges on the face, will have a like effect.

3. As the days pass, more and more muscles become involved in the response. Starting with a simple movement of the neck muscles, it comes to involve the longitudinal muscles of the back; later those of the limbs and tail, as well as those of the throat and trunk: by the forty-second day the diaphragm is formed, and it too is involved.

4. The response has become rhythmic. No movement is sustained for any length of time, but the whole response lasts perhaps a half to three-quarters of a minute, in that it consists of a rhythmic series of individual spasms. Each spasm involves, as indicated above, a great part of the whole musculature of the living foetus. The conditions which determine its periodicity have not been defined.

This perhaps is the place for a word about the phenomenon spoken of as "spontaneous movement." Most users of this phrase, ourselves included, have safeguarded themselves by saying that it means no more from their pen than an admission of inability to ascribe any definite form of stimulus to the movements. The phenomenon is evident enough, and is that in first opening the uterus the foetus as seen in the sac is undergoing rhythmic movements similar to those described above. In view of what has just been said about the ability of currents in the amniotic fluid and slight changes of pressure to produce foetal rhythms, we are sceptical as to the spontaneous nature of these rhythms, using the word "spontaneous" in the sense of something which starts in the central nervous system without the interference of stimuli from an afferent field.

Stage III: The Individuation of the Generalized Rhythm into Somatic Movement and Respiratory Movement

If the rhythm be set up by stimulation of the snout with a glass rod at about forty days the following may be seen. The first, or the first and second, of the individual mass movements which constitute the rhythm differ from the succeeding movements as follows. The extensor element is more pronounced. The head is thrown back—a composite movement which consists of an extensor and a flexor component; in the subsequent movements the extensor component drops out and the head nods forward. During the seventh week of foetal life the two sorts of movements diverge in type, till at the forty-ninth day the initial somatic movement is a long-drawn-out spasm, while the tendency of the subsequent rhythm is for all the muscular movements to be shed except those of the diaphragm, the thorax, and the throat. Here, then, is the essence of the neuro-muscular mechanism of respiration. It consists of three components: the sensory stimulus, the immediate somatic response, and the subsequent respiratory response. I am fortunate to have Professor Adrian as my chairman: neither in his presence nor in his absence would I make any attempt to say by what chain of events in the central nervous system a foetus can start with a hit on the nose or rump and end with an effort to get up, followed by the movement of a breathless attack; I know he would not allow

* Read in opening a discussion in the Section of Physiology and Biochemistry at the Annual Meeting of the British Medical Association, Aberdeen, 1939.

me to say that the stimulus is turned into the response, but I am in hope that his own contribution will help to bridge the gap.

We have, then, the germ not only of the respiratory mechanism but also that of its regulation, for the three factors enumerated (the sensory stimulus, the immediate somatic response, and the subsequent respiratory response) are related to one another quantitatively: the stronger the stimulus the greater the somatic response and the greater the respiratory effort which follows it. At seven weeks the system has become very delicate. It is almost impossible to hold the foetus so quiet as to avoid the liminal stimuli required to initiate respiratory movement. Whether these stimuli are proprioceptive or whether they are due to alterations of pressure on the surface I cannot say; but the result is evident: quite a small movement initiates a respiratory rhythm in an otherwise quiescent foetus, whilst in one which already exhibits a rhythm muscular movement is associated with an alteration of the rhythm in three respects—(1) the frequency increases; (2) the movements become deeper; (3) the area of movement spreads. In short, the foetus exhibits the cardinal characteristics of forced respiration. It seems difficult to escape the conclusion that even at the seven-week stage nervous regulation of respiration—the phenomenon demonstrated by the classical experiment of Krogh and Lindhard—has been laid down. The nervous regulation of respiration, as opposed to the chemical, is, then, the first in time to be evolved, and appears to be part of the very essence of movement. Up to this date asphyxia has no effect upon bodily movement—respiratory or otherwise—except to obliterate it.

Time and space forbid a discussion of the anatomical basis of the individuation into somatic movement and respiratory movement. This much may be said: the individuation is coincident with the functional appearance of the midbrain, and demonstrates the first phase in the progressive forward development of the brain; for if the foetal brain be transected between the medulla and the red nucleus the pattern of movement reverts to a modification of the six-week stage—that is, a simple rhythm of a respiratory type.

Stage IV: Inhibition in Relation to the Asphyxia Factor of Respiration

From the end of the seventh week the foetus undergoes a remarkable change: from being on a hair-trigger it becomes increasingly inert. Stimulation elicits little movement, either somatic or respiratory. The foetus appears almost dead. That it is not may be demonstrated by three different procedures, application of any one of which will produce a reversion to the lively seven-week stage. These are: (1) transection of the central nervous system at the middle of the forebrain; (2) exposure; (3) and in the present connexion most important of all, asphyxia—that is, occlusion of the umbilical cord.

The first of the above procedures demonstrates the general nature of what is taking place. The section is made at any time after the fiftieth day, and the foetus allowed to grow on in the uterus so that there may be no question of traumatic stimulation. It then becomes clear that the alteration from the quiescent to the active stage is a matter of *release*. The lower centres are released from one in the upper part of the forebrain but below the cortex; in fact, the whole foetus after the seventh or eighth week is maintained in a condition of profound inhibition. Respiratory movement is no exception to this general condition; its existence at any time, or if it exists its degree, depends upon the issue of a battle between sensation and inhibition. The chemical factor in the regulation of respiration is in part the abolition of inhibition. Inhibition represents another phase in the forward functional development of the brain. Any circumstance which promotes sensation in the foetus will make for increased respiratory movement, the natural factor being somatic movement. Any factor which tends to reduce inhibition will have the same effect. If the two take place simultaneously their joint effects might be expected to be greater than that of either separately.

Stage V: The Onset of Birth

Such would appear to be the case at birth, for which the foetus is now fully prepared.

Increased Sensation.—The organism is at this stage introduced into a new environment, and one calculated enormously to increase the number of stimuli from sensory areas: stimuli of cold and touch from the skin; proprioceptive stimuli from the limbs, which are now able to move freely; and, not least, stimuli from the embryological origin of sensation, the maxillary division of the trigeminal nerve.

Depressed Inhibition.—At the same time the inhibition is depressed by asphyxia. This fact has two repercussions: (*a*) direct, (*b*) indirect.

(*a*) We are now in a position to give some quantitative estimate of the degree of asphyxia necessary to release the foetal respiratory mechanism. It amounts to a reduction of the percentage saturation of the blood from the brain—that is, gleaned from the sinuses—to about 20 to 10 per cent. oxygen saturation. At the level of asphyxia respirations will start.

(*b*) But release also takes place in other directions; reflexes generally become heightened, and the proprioceptive afferent stimuli resulting from the movements liberated may be an appreciable addition to the increase of sensation.

After the first breath—that is, after the chest has actually expanded and respiration has become established on a tentative basis—a whole new set of sensory stimuli come in from the respiratory area itself—the nose, the throat, the lungs, the diaphragm, and the chest wall. It will be for future research to sort these out and to determine whether or not to the end the regulation of respiration is a battle between sensation and inhibition. In the foetus, inhibition had the upper hand so completely that respiratory movements did not normally take place once it had been established; post-natally, on the other hand, sensation has the upper hand, inhibition merely damping the respiratory movements.

Some Pathological Forms of Forced Respiration

In the light of what has been said I find it interesting to review the possible cause of certain forms of hyperventilation that are associated with obvious dysfunction of the higher parts of the brain. Two which I may instance are found in coma and cerebral haemorrhages. It has always appeared difficult to me to associate these with stimulation of the respiratory centre, and therefore it seems not out of place to inquire whether they are not due to some form of release of medullary centres from an inhibition centre placed in the upper part of the forebrain. At all events, granting the existence of such a centre it would seem wholly reasonable to suppose that influences which deprived the cortex of its consciousness might extend their devastating influence to the upper part of the thalamus.

TREATMENT OF ANGINA OF EFFORT*

BY

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Cardiac pain may be founded on organic disease of the coronary vessels or it may be of a functional variety described variously under labels such as angina innocens, pseudo-angina, and left submammary pain. There are also certain well-known non-cardiac causes of chest pain which simulate cardiac pain fairly closely: fibrositis of the pectoral muscles, brachial neuritis, cholecystitis, pneumothorax, and diaphragmatic hernia are examples of this.

The first essential step is to distinguish clearly angina of effort. This is a pain generally felt centrally in the chest, but occasionally more on the left side. In a few individuals its first and chief manifestation may be in one or the other arm. Classically it is central and radiates most commonly to the left arm or to both arms. It is a quantitative pain, being exactly proportional to the amount of exercise the patient is taking. With slow walking or at rest there is no pain, but with any increase in the amount of exercise above a definite level a sensation of pressure, discomfort, or even pain arises. Should the exercise be increased the pain is quantitatively increased, and if the exercise ceases the pain immediately begins to subside. This symptom is so exact and so striking, and is supported so strongly by evidence on the point obtained electrographically and by post-mortem examination, that there can be no doubt that it results from some interference with the adequate flow of blood through a branch of the coronary arteries during exercise.

Grouping of Cases

For purposes of treatment angina of effort can be divided into two groups—the slight or moderate and the severe. Slight angina of effort need not be treated by rest in bed. There is only one real indication for putting such a patient to bed, and that is where the angina of effort is the only symptom of a small coronary thrombosis. This is a somewhat rare occurrence, but very definite in its symptoms, and suspicion of it should arise whenever angina of effort suddenly starts in a hitherto healthy person. In such cases the severity of the pain is greatest at the beginning and slowly subsides as time goes on. In the ordinary case the onset of the pain is gradual and is at first not taken great notice of by the patient, who ascribes it to flatulence or dyspepsia. Here the patient should be encouraged to take as much exercise as is comfortable, provided that it does not bring on pain. Where the pain only occurs at the starting of exercise, after which it can be walked off so that subsequent exercise produces no pain, the patient should be encouraged to do this, if necessary with the help of a tablet of nitroglycerin, which should be taken before the first pain is due to arise. The reason for encouraging such patients to take as much exercise as possible is that this measure is most likely to stimulate the development of a collateral circulation in the heart.

Patients with symptoms of angina of effort may also be subjects of adiposity. These patients may be helped considerably by a reduction in their weight. This reduction should not be made too rapidly, and if possible it should not be accelerated by the use of thyroid extract, for hyperthyroidism appears to be a factor in the sensitivity of the nervous system to cardiac pain. Another general measure to be considered is that of posture. The individual who carries most of his weight in his abdomen tends to assume automatically a position of lordosis. It has been claimed that correction of this posture by a properly fitting abdominal belt helps the thoracic movements and thus the mechanical position and function of the heart.

Prognosis

Perhaps the most necessary step in the treatment of patients with cardiac pain is an absolutely full and sympathetic physical examination. The patient should be first convinced that his cardiac condition has been made quite clear by the examination, and this examination should entail a complete history, physical examination, and investigation by electrocardiograph and screening apparatus. The next step is to explain to the patient, to an extent compatible with his understanding, that his symptoms are due to some loss of elasticity in a blood vessel, the result of which is that the heart is not receiving its full amount of blood during exertion, and to indicate to him that gradual and careful exertion is likely to help the organ to readjust itself to the new situation. The label "angina" should be omitted, for its application will only add a quite unnecessary factor of apprehension. The second point that should be stressed is that the pain is not dangerous, and that patients do not die during such attacks of pain. In an investigation into 112 successive cases of angina of effort Dr. Bodley Scott and I found only one example of death during an attack. It should also be borne in mind that patients with true angina of effort may live from ten to fifteen years after the start of the symptoms, and that although a certain proportion of them subsequently die of coronary thrombosis, yet many succumb to some quite different disease.

The above reasonably good prognosis will have to be modified and the modification explained to the patient's most responsible relative in certain circumstances; these are the presence of severe shortness of breath during exercise, of Cheyne-Stokes respiration, or of paroxysmal nocturnal dyspnoea, and electrocardiographic evidence of some serious myocardial disease, such as shown by a bundle-branch lesion, inversion of the T wave in Leads I and II, or a deep Q wave in Lead III. Another point suggesting a bad prognosis is a family history of sudden cardiac deaths during the 50's or early 60's. In one such family two brothers of the patient had died of coronary thrombosis and one had recovered from an attack, while the patient himself had suffered from coronary thrombosis two years previously and his tracing now showed evidence of gross myocardial disease.

In addition to reassuring the patient to the fullest possible extent, it should be explained that life must be lived physically and mentally in as leisurely a manner as possible. Hurry, tension, and strain should be avoided, and an attempt to cram into the day just one or two more activities than it would comfortably hold should be prohibited.

Coexisting Conditions

Certain other conditions may be present in a patient suffering from angina of effort. Disease of the stomach is particularly apt to accentuate cardiac symptoms, and the possibility of gastric ulcer, hyperchlorhydria, or even carcinoma must be considered, and, if present, they must be treated. A man who had been attending St. Bartholomew's out-patient department with a classical angina of

* This paper forms the basis of a lecture to the Willesden Division of the British Medical Association and to the St. Leonards Medico-Chirurgical Society.

effort was found also to be suffering from dyspepsia and loss of weight. He had a carcinoma of the stomach, which was removed surgically, after which his cardiac pain subsided. The effect of rest in bed as such could be considered here as a factor, but rest in bed alone is not usually followed by the disappearance of the symptoms of angina of effort. Disease of the thyroid gland where hyperthyroidism or hypothyroidism is present should also be kept in mind. Two cases of myxoedema with angina of effort in our follow-up clinic have been treated with thyroid extract, and both patients have lost their cardiac pain. Diabetes mellitus is often complicated by arteriosclerosis of the coronary arteries, resulting in angina of effort. Careful treatment of the diabetes generally helps these patients, but it should be remembered that the heart muscle needs a free supply of glycogen, and therefore, if it is not possible to balance the diabetes with less than 120 grammes of carbohydrate per day, it is advisable to give a freer supply of this with a proper quantity of insulin.

Drug Treatment

The drug treatment of angina of effort is somewhat disappointing except for the effect of nitroglycerin. Phenobarbitone, 1/4 grain t.d.s., p.c., is probably the most useful drug; but it can be given in combination with theobromine or diuretin in some such preparation as theogardinal, 5 grains t.d.s., p.c. In a few cases theobromine alone, 3 grains t.d.s., p.c., or theobromine sodium salicylate, 10 grains t.d.s., p.c., is effective. Nitroglycerin tablets can be taken by the patient as often as they may be required for the prevention or the treatment of pain. They are generally put up in chocolate, so that the patient may be reminded to crush them in the mouth and hold them there for a few minutes before swallowing. If they are swallowed direct, pharmacological action is delayed and is sometimes less efficient.

Type of Person Affected

It has long been known that patients with angina of any kind tend to be of the highly strung, easily reacting type, and this is borne out by the fact that the symptom is said to be rare among the negroes and the Chinese, whose threshold for pain seems to be higher. A scientific basis for this observation is suggested by the work done by Dr. Wittkower and myself on the psychological make-up of patients suffering from heart disease with and without cardiac pain. The proportion of patients with some psychological abnormality is higher in the cardiac pain group. This increase is present both in angina of effort and in the functional group, but is higher in those patients with a functional type of pain. Following upon this a series of twelve cases has been treated by Dr. Wittkower psychologically, and the results seem to indicate that where a definite psychological abnormality exists the treatment of this is likely to help to diminish or to banish the cardiac pain.

Three Organic Diseases influencing Treatment

There are three organic diseases which interfere with the coronary circulation and which must be remembered in planning a course of treatment in angina of effort. These are coronary thrombosis manifested by angina of effort, angina of effort due to syphilitic aortitis, and angina of effort due to anaemia, whether pernicious or microcytic. Where angina of effort follows directly after a coronary thrombosis there is a very good chance of its disappearing completely during the subsequent twelve months or so, and the patient should be so informed. In the case of syphilitic aortitis manifesting itself by angina of effort the cardiac pain can often be cured by thorough anti-syphilitic treatment. This should consist of a six-weeks course of full doses of potassium iodide, 90 to 150 grains daily, a subsequent course of bismuth injections, and a final course of intravenous injections of neosalvarsan. This programme should be repeated, with intervals of two to three months' rest, until the Wassermann reaction becomes and remains negative. When angina of effort is due to anaemia, the pain nearly always completely disappears with the improvement of the blood count.

Thyroidectomy

The vast majority of all cases of angina of effort respond successfully to treatment on the lines described, but there remains a small group in which the cardiac pain is extremely severe and no improvement follows persistent treatment. In these cases some operative procedure may be justifiable. From a total of about 400 cases of angina of effort I have picked out fourteen as being suitable for thyroidectomy. In nearly every one of these the relief from pain has been striking, and this relief has lasted in the least successful case for a period of six months. The more successful cases have had periods of up to three years, during which time the pain has either vanished or has become so slight as to cause no serious inconvenience. The details of this procedure have been published elsewhere, but it should be remembered that so radical a measure should not be embarked upon without very serious consideration.

The chief indications for thyroidectomy would seem to be that the pain is extremely severe, that previous treatment has failed, that the pain shows no sign of decreasing, that the pain is not the result of a recent coronary thrombosis, that the patient is not adipose, and that there are no signs, clinically or electrographically, of grave disease of the heart muscle. It is possible that in the future omentopexy could be a means of successfully treating these patients, but the evidence available to date has not proved without doubt the usefulness of the measure as a method of general application.

Summary

The origin and symptoms of angina of effort are described.

Cases are classified into two groups and treatment in these is detailed, the necessity for a complete and sympathetic physical examination being stressed.

Points suggesting a good or a bad prognosis are discussed.

Concomitant conditions that accentuate the symptoms of angina of effort are subjects of survey, together with three organic diseases that influence treatment.

The indications for thyroidectomy are given.

Calcium Deficiency.—A diminished calcium content of the blood may be accompanied by normal, excessive, or diminished excretion of calcium in the urine. Treatment by calcium salts orally is rarely efficient. Injections of calcium have a transient effect only, but are useful in tetany and in similar manifestations. Treatment by irradiated ergosterol—8,000 to 10,000 rat units a day for about a month—gives good results in rickets and osteomalacia, and in tetany with calcium deficiency. A.T.10 is less valuable because it mobilizes the calcium at the expense of the bones.—Calcium Deficiency. J. Decourt.—*Ann. Méd.*, May, 1939, **45**, 362.

INGUINAL HERNIA

A NEW OPERATIVE REINFORCEMENT

BY

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Max Page (1934) stated that the recurrence rate in inguinal hernia was far greater than previously admitted, and in healthy metropolitan policemen, whose average age was 32, the rate amounted to 20.2 per cent. in indirect and 25.8 per cent. in direct varieties. Since this paper several carefully examined series of cases supporting Page's view have been published. Grace and Johnson (1937) record 1,032 cases, all over 50, with a recurrence rate of 25.8 per cent., Birkenfeld (1933) gives 28.49 per cent., Lyle (1928) 10.3 per cent., Fallis (1936) 8.25 per cent., and Block (1933), in 642 cases personally followed for two years, 34.8 per cent.

Fascia sutures have been of great service in repairing wide hernias, but even this method is not without defect, for Burdick *et al.* (1937) admit 29.1 per cent. of failures in a series of 975 fascial repairs. In addition, it is tedious and time-consuming to use this material. Ogilvie and Maingot (Maingot, 1937) have employed heavy floss silk loosely woven across the posterior wall of the canal to form a lattice. They claim that the minute fibres constituting the silk cords are readily absorbed, provoke little reaction, and have no tendency to encourage sepsis. Graham (1938), however, states that it is necessary to use fine silk, heavy braided silk being harmful.

Injection treatment alone, while of value in preventing hospitalization, is open to the serious disadvantage that twelve or more appropriate fluid quantities must be placed exactly in the right position. The difficulty of controlling the hernia throughout the treatment and the danger to testis, cord, or bowel by "blind" injections have compelled many surgeons to discard this procedure. What emerges from this method of treatment is the fact that experimentally and clinically selected sclerosing solutions can create a firm area of fibrous tissue.

The general disinclination of the public to accept herniorrhaphy is shown by the number of patients who are prepared to put up with the discomfort of a truss for the rest of their lives: one instrument firm in London manufactures no fewer than 3,000 spring trusses a week.

The present method aims at reinforcing a satisfactory operative repair with the adhesive barrier of the injection treatment.

Technique

The hernial sac is isolated and ligatured as high up as possible, a split salad-spoon facilitating this high excision. A Bassini repair operation is done, approximating the conjoined tendon to Poupart's ligament, either with two strips of external oblique, as in lacing up a boot and originally described by McArthur in 1901, or by the use of non-absorbable sutures. Salmon-gut, because of its lack of capillary attraction and its inability to absorb organisms, is probably safer to use than silk. Orthopaedic surgeons have preferred this material for years. A lozenge consisting of sodium psylliate in gelatin is then placed on the anterior wall superficial to the conjoined tendon but deep to the cord. The external oblique and skin are then closed in the usual manner.

Results

The first case was operated upon in March, 1938. At this time the sac was carefully isolated and, after division between double ligatures, the distal portion was filled with sclerosing fluid. The ball that resulted tended to slip about and was difficult to keep behind the cord. In the next case a slab of gelatin was used, and this proved to be much more convenient.

In all, twenty-three cases have been submitted to this operative reinforcement. Various strengths of sodium psylliate in different conveying materials have been tried. With moderate amounts of sodium psylliate a mild swelling of the wound has occurred, and has subsided in fourteen days. The distinct impression is gained that there is a plate of firm fibrous tissue around the operative site. With too strong solutions intense swelling and bruising of the skin are likely to follow, but even extensive reactions settle down within two or three weeks. Such reactions have not occurred in the later cases.

Conclusions

This is a preliminary report of a method which has not yet stood the test of time. Only the cold candour of a long series of cases will assess its utility. The small number already treated show a firm scar and encourage a further trial. A suitable conveying material that will liberate larger amounts of sclerosing fluid in minute doses over a long period of time is in preparation; this will increase the desirable fibrosis.

I am grateful to Dr. O'Neill and Dr. Shore, medical superintendents of Napsbury and Shenley Hospitals, for allowing me to select cases, and to Mr. Alex Rae, chief pharmacist of the Hospital for Sick Children, for his advice and for the preparation of the psylliate slabs.

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The Economic Intelligence Service of the League of Nations has just published a study entitled *Urban and Rural Housing*, containing a comprehensive account of the methods employed in a number of countries for improving housing conditions, with special reference to the cost involved and the results obtained. It is of particular interest at the present time, since it deals largely with housing problems raised after the war of 1914–18 and the attempts made to solve those problems in various countries up to the outbreak of hostilities in 1939. It should therefore appeal to all interested in reconstruction schemes at present or in the future. The countries dealt with are Belgium, the United Kingdom, Canada, Denmark, Finland, France, the Netherlands, Norway, Sweden, and the United States of America. The author was able to visit most of these countries and to investigate on the spot the practical difficulties encountered by the housing authorities; in addition he has co-ordinated the material published by or obtained from Governmental and municipal authorities and other sources. A chapter is devoted to each country, and the information arranged in such a way as to permit the reader to compare housing problems and the efforts being made to meet them in different circumstances. A special paragraph is devoted in the case of European countries to the problem of rural housing and the measures taken to improve the housing conditions of agricultural workers or other groups of the rural population. The report is published at 3s. 6d. by George Allen and Unwin, Ltd., 40, Museum Street, W.C.1.

CONSERVATION OF THE CERVIX UTERI IN OPERATIONS FOR PROLAPSE

A NEW OPERATIVE PROCEDURE

BY

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In reviewing current methods in gynaecology one observes a persisting hesitation to practise the first principle of surgery—preservation of function. A distinction should ever be drawn between women of child-bearing age and those no longer capable of reproduction. In the former, preservation or restoration of function should be our aim; in the latter, certain cure of symptoms by radical means is justifiable. There is a persistent hesitation to adopt planned conservative measures lest symptomatic relief should be incomplete, and there is failure to count the cost at which a radical cure may be purchased. Avoidable hysterectomies are still being performed for "tarry cysts," pus tubes, and even fibroids in comparatively young women, although many successful pregnancies after conservative treatments have been recorded.

The early masters in gynaecology were careful to preserve this distinction between case groups. In prolapse they tended to operate only in the more severe cases usually associated with older women, while pessary treatment was employed for the minor degrees of prolapse found in younger patients. They were conservative, too, in their attitude to lacerations and diseases of the cervix. The apparent success of amputation of the cervix, with or without colporrhaphy, may have caused the pendulum to swing too far in the direction of radical surgical treatment, and it is worth while to analyse some of the harmful after-effects of this change. Modern technique has brought with it wider accomplishment and greater safety, but it has also brought new dangers and new problems.

Cervical Amputation

Cervical amputation was first widely practised by the French surgeons. Huguier, stimulated by the work of Lisfranc, adopted amputation as a routine measure in all cases of procidentia. Marion Sims in 1866 advocated the operation not only for prolapse but also for hypertrophy and disease of the cervix. Sims believed that the operation did not interfere with child-bearing, and quoted two cases of normal pregnancy and labour after his operation. T. A. Emmet in 1869 reported his operation of trachelorrhaphy which he had devised in 1862. Twenty years later, however, he advocated amputation after the manner of Sims for many cases in preference to repair, partly because it was an easier operation and partly because of its more curative effect on symptoms. He then stated that amputation had no effect on fertility, pregnancy, or labour. J. D. Emmet in 1895 advocated a return to trachelorrhaphy in view of the ill effects sometimes found after amputation, a view contradicted by T. A. Emmet in 1897. Meanwhile Schroeder in 1878 and 1880 had devised and reported on 220 cases operated on by his method of circular amputation with every appearance of success.

About this time amputation of the cervix came to be associated with colporrhaphy as an operation for prolapse. In 1888 Cohn reported 105 cases of prolapse so treated by Olshausen and Schroeder, and about the same time Donald independently devised a similar treatment. In 1914 Fothergill modified the operation by combining amputation of the cervix with the anterior colporrhaphy, and his publication (Fothergill, 1921) of the excellent results obtained led to widespread adoption of his method for all types of prolapse.

Criticisms of Cervical Amputation

Audebert in 1898 was one of the first to draw attention to the ill effects of Schroeder's operation. In a comparison between pregnancies in the same women before and after amputation of the cervix he found this marked difference: before operation these women had twenty-two labours at term and five abortions or premature labours, whereas after operation they shared five labours at term, nine premature labours, and ten abortions. In addition he reported a high incidence of dystocia, often involving incision or dilatation of a stenosed canal. Leonard (1913, 1914), in an extensive analysis of the after-effects of cervical amputation on 128 cases at the Johns Hopkins Hospital, found that four-fifths of the women who might have been expected to become pregnant remained sterile. Of those who became pregnant 50 per cent. had premature interruption of pregnancy, and of those proceeding to term an even larger percentage had difficult and prolonged labours.

Sturmdorf (1916), having noted Leonard's findings, devised his new method of amputation of the cervix, which aimed at complete excision of the cervical mucosa to the internal os with preservation of the cervical muscle. Sturmdorf maintained that by this method disease could be eradicated without any interference with the polarity of the uterus.

Rawls (1921), analysing the same subject, found sterility in 58 per cent. of women after trachelorrhaphy, as compared with 72.6 per cent. after amputation of the cervix. Further, he found that amputation carried a disadvantage in that there were 18 per cent. fewer full-term labours, and 6.2 per cent. more spontaneous abortions occurred after amputation than after trachelorrhaphy. Rawls also noted that three Caesarean sections were necessary in 100 labours after cervical operations, and that relaceration occurred in 40 per cent. of this series.

Brandt (1933) described three cases of abnormal labour following amputation of the cervix—one by Sturmdorf's method and two by circular amputation. One patient died of rupture of the uterus, one developed a large vesico-cervical fistula as the result of rupture of a cervical scar, with extension into the bladder, while in the third Caesarean section was performed as no os uteri could be detected.

Hesseltine (1934) reported a case of labour at term following cervical amputation. After eighteen hours in labour there was no dilatation and no os could be found. Caesarean section was performed as rupture of the uterus seemed imminent, and actual spontaneous rupture of the lower segment occurred while the operation was in progress. Davis (1929) reported a similar case. Gonnet and Mermet (1933) reported another case of obstructed labour, with fatal termination. Many other cases could also be quoted from the literature.

Zoefgen (1936) had found high amputation so inimical to conception that he recommended the operation as a sterilizing measure. Novak (1936) criticized this statement, and quoted two cases of repeated abortion after the operation. He stressed the need for a careful statistical review of the results of amputation in women of child-bearing age.

Repeated Abortion following Amputation

My attention was first drawn to the possibility of repeated abortion as a sequel to cervical amputation by my late chief, Dr. Haig Ferguson. He had the care of a patient whose cervix had been amputated by T. A. Emmet, and who had seven subsequent abortions. Anxiety for an heir made her consent to remain in bed from the very start of a pregnancy, and in this way she had her first and only living child at seven and a half months. Sfameni (1925) recorded a case of amputation of the cervix for leucorrhoea after a normal confinement. This was followed by four successive abortions.

Recent Cases of Abortion

During the past eighteen months several cases of repeated abortion following amputation of the cervix have reported at my out-patient department.

Case 1.—Para 3. Colporrhaphy with amputation of the cervix at the age of 30. During the following six years she had five miscarriages, all necessitating curettage. Sterilization was performed owing to the disability resulting from the repeated abortions.

Case 2.—Para 3. Colporrhaphy with amputation of the cervix at the age of 26. She had four miscarriages in the four years following the operation.

Case 3.—Para 2. Amputation of the cervix at the age of 26. During the following seven years she had three miscarriages, at the sixth, fifth, and sixth months respectively, and came under my charge during the third abortion.

Case 4.—Para 2. Amputation of the cervix at the age of 30. Since operation she has had three miscarriages—one at four and a half months, one at the third month, and one at the fourth month.

Case 5.—Para 1. Colporrhaphy and amputation of the cervix at the age of 26 after one confinement. During the next seven years she had four miscarriages, at times varying from the second to the sixth month. Her only child died recently, and she was desperately anxious to have another. During her last pregnancy she was kept in bed in hospital from the eighth week, but in spite of this she miscarried at the fifth month.

Case 6.—Para 1. Amputation of the cervix at the age of 25. Patient was sterile for five years following the operation and then became pregnant. Before pregnancy the cervical stump had been found flush with the fornices and the uterine cavity only two inches long. At the fifth month the membranes ruptured while she was asleep. Two days later evacuation of the uterus had to be performed, as the cervix remained closed and the uterine content was becoming fetid. Considerable difficulty was experienced in dilating the cicatricial cervix.

Case 7.—Para 1. Amputation of the cervix six months after confinement. During the next eight years she had four miscarriages between the third and fifth months.

In these seven women twenty-four abortions had occurred, and practically every one was incomplete and required curettage. Previous to amputation only one abortion had happened in this series.

Recent Cases of Dystocia

I have also been able to collect a number of cases of dystocia after amputation of the cervix. In the past ten years I have had occasion to perform Caesarean section on five women, at or near term, for pronounced stenosis of the cervix. In three of these cases long and tedious labour failed to produce any dilatation and it was difficult to define a cervical canal. In one case a patient had complete suppression of lochia and developed pyometra. On the tenth day graduated probes were passed with difficulty and a pint of pus was evacuated from the uterus. A rubber tube was stitched into the cervical canal, and adequate drainage and a good recovery followed.

In collecting hospital statistics over a period of eleven years I have been able to find records of eighteen labours at or near term after amputation of the cervix, with or without colporrhaphy. In ten cases the delivery was normal. The other eight cases had serious dystocia: three were delivered by Caesarean section for cervical atresia, three had vaginal Caesarean section, and two had manual dilatation of the cervix with version and extraction. There were three maternal deaths, in each case due to extension of a cervical rupture into the lower uterine segment. One followed vaginal hysterotomy with forceps extraction, one after manual dilatation with version and extraction, and the third after breech extraction. All three deaths occurred in emergency cases—in one complete rupture had taken place, and the child was in the abdominal cavity on admission.

Operative Treatment of the Cervix

A study of the literature and the account of these recent cases force us to the conclusion that amputation of the cervix in a woman of child-bearing age may have one of these unfortunate results—namely, sterility, repeated abortion, premature labour, or serious dystocia. Leonard's figures for sterility, quoted above, are worthy of serious consideration, and large statistical follow-ups are urgently needed. The wastage and dangers involved in these repeated and often incomplete abortions require us to make a careful review of the whole question of cervical function and surgical procedure.

Cervical Repair

In regard to lacerations of the cervix we might at any rate consider a more extended use of Emmet's original operation of trachelorrhaphy. It is often possible, by excising two or more deep lacerations and carefully suturing the edges of the tears, to restore an extremely distorted cervix to an almost normal contour. During recent years I have employed this method on women of child-bearing age with increasing frequency, and have found the results extremely satisfactory, both as regards relief of symptoms and subsequent childbirth. True, the operation scars in the cervix not infrequently split open during delivery, but these can be resutured at the time; even if this is not done the operation has fulfilled its purpose in enabling the woman to carry her pregnancy to term. A more detailed study of statistics in relation to trachelorrhaphy will be the subject of a further paper.

Cauterization

In cases of cervicitis with wide erosion and numerous Nabothian follicles the use of cauterization in preference to amputation might be advocated. Brunet and Salberg (1938) report 538 cases treated in this way by the "nasal loop" cautery with excellent results. In studying over 1,000 cases of cervicitis in the Mayo Clinic, Masson and Parsons (1928) state that the cautery is as effective as amputation in the cure of leucorrhoea; that pregnancy occurs more often, miscarriages are less frequent, labour is more often normal, and subsequent lacerations less liable to occur. Roblee (1931) advocates a combination of cautery and electrocoagulation, and maintains that this procedure entirely supersedes amputation and is never followed by stenosis. Harriman (1929) reports a comparison of cases treated by cautery and electrocoagulation, and is strongly in favour of the latter method, and main-

tains that hypertrophied cervical lips may by this treatment be reduced to normal size. Ende (1929) criticizes cauterization by thermocautery because of the danger of subsequent cervical stenosis, but has obtained excellent results in 200 cases treated by diathermy.

During the past ten years I have treated a large number of cases of cervicitis by diathermy cauterization, and more recently by electrocoagulation. The results, which I hope to publish in detail later, have been extremely satisfactory. Cervical stenosis has been recorded after deep linear and radial cauterization, and I prefer superficial cauterization of the whole eroded area by diathermy followed by multiple stab cauterization at about a dozen points in the cervix, dependent on the extent of the disease. This is followed in a few months by a return of the hypertrophied lips to normal size, disappearance of the erosion, and disappearance or amelioration of the systemic and local symptoms.

In cases where there is gross hypertrophy, and where trachelorrhaphy or cauterization is unsuitable, amputation should be as shallow as possible, and high circular amputation should at all costs be avoided.

A New Operative Procedure for Prolapse

(*Figs.* 1 *to* 12)

In the case of prolapse in women of child-bearing age the problem is more difficult. The operation devised by Donald and perfected by Fothergill stands supreme in the surgical cure of prolapse, and for women past the menopause is unequalled in its perfect results. For women

FIG. 1.

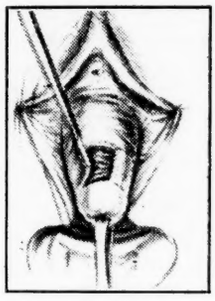

FIG. 2.

FIG. 3.

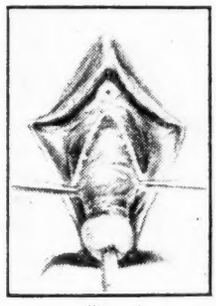

FIG. 4.

FIG. 2.—Two circular incisions are made round the cervix, about one inch apart, and a cuff of vaginal wall is dissected off.
FIG. 3.—A complete cuff of vaginal wall has been removed from the cervix.
FIG. 4.—A triangular flap is removed from the vaginal wall as in the Fothergill colporrhaphy. The apex starts just below the urethra, and the lateral incisions are carried downwards and outwards to the widest part of the upper circular incision round the cervix.

FIG. 5.

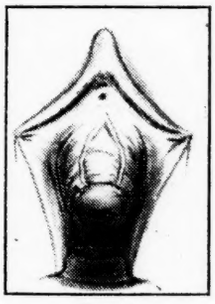

FIG. 6.

FIG. 7.

FIG. 8.

FIG. 5.—Starting posteriorly, interrupted sutures fix the cervix to the upper incision.
FIG. 6.—This shows the cervix almost completely sutured to the upper incision. The cervix and uterus are thus carried up to a higher level.
FIG. 7.—The cervix completely sutured to the upper flaps. The lateral angles of the vaginal flaps are joined together and to the cervix by a mattress suture.
FIG. 8.—If the uterus is displaced backwards the peritoneum of the utero-vesical pouch below the bladder is opened.

FIG. 9.

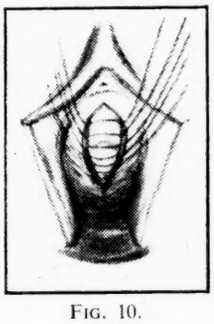

FIG. 10.

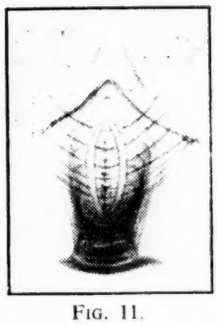

FIG. 11.

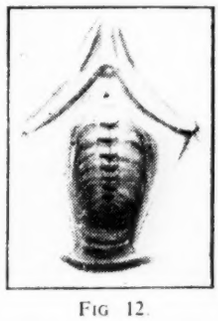

FIG. 12.

FIG. 9.—The bladder is dissected upwards, and that part of the fundus uteri between the round ligaments, A, is fixed by interrupted catgut sutures to the peritoneum of the utero-vesical pouch, B.
FIG. 10.—Deep interrupted sutures are used to bring the pubo-coccygeus muscles and parametrium together on each side.
FIG. 11.—The anterior vaginal flaps are brought together by interrupted sutures and the anterior colporrhaphy completed.
FIG. 12.—The completed anterior colporrhaphy. The posterior colporrhaphy is then performed in the usual way: no illustrations of this are shown.

liable to further pregnancies, however, the amputation of the cervix, which is an integral part of the operation, may be disadvantageous for reasons we have seen, and because of this I have attempted to devise a modification suitable for young women which, while preserving the essentials of the Fothergill method, may yet conserve the cervix. The operation is applicable to those cases of prolapse in young women where there is no great degree of cervical hypertrophy, and where the total length of the uterine cavity to the external os does not exceed three to three and a half inches. It is applicable to that type of prolapse in which there is relaxation of all the uterine supports, the pelvic floor, and the vaginal walls, the uterus being at a low level in the vagina.

Technique.—Briefly the steps are these. A circular incision is made about half an inch above the external os, and another an inch to one and a half inches above this, and a complete circle of superficial vaginal epithelium is stripped off (Figs. 1, 2, and 3). A V-shaped excision of vaginal epithelium, as done in the ordinary Fothergill colporrhaphy, is then made, starting from just below the external urinary meatus and extending downwards and outwards to join at the lateral aspect of the upper circular incision (Fig. 4). The cervix is then stitched to the vaginal epithelium, starting posteriorly and working round to the front on each side, and thus the Fothergill principle of sliding the uterus up is maintained but with conservation of the cervix (Figs. 5, 6, and 7). The anterior colporrhaphy is then finished in the ordinary way (Figs. 10, 11, and 12), and the operation completed by posterior colporrhaphy and perineorrhaphy.

Unfortunately one finds in practice that in this operation the uterus tends to remain in the pelvic axis, and as at the same time in a young woman one has to be careful not to cause undue narrowing of the vagina, there may for this reason be some possibility of recurrence. One of the greatest advantages of the Fothergill operation is that the uterus tends to be brought into anteversion and so to be at right angles to the vagina, thus preventing any possible descent of the uterus; and, even if this anteversion does not always result, the scar tissue consequent on amputation of the cervix will almost certainly help to prevent any future tendency for the uterus to come down. For this reason a modification of the anterior colporrhaphy in the new operative procedure may be useful to antevert the uterus, and so lessen the chance of recurrence. This may be done by opening the anterior peritoneal pouch below the bladder, and stitching the anterior portion of the uterus at the level of the round ligaments to the peritoneum of the utero-vesical pouch as a step before performance of the anterior colporrhaphy (Figs. 8 and 9). This gives a more satisfactory result, and one case in which it was performed was followed by pregnancy and labour without any tendency to recurrence of the prolapse or retroversion. Perhaps an even better result can be obtained by anteverting the uterus, using the Alexander Adams method of suspension; but this involves a second incision, is a tricky operation, and adds somewhat to the time taken. May I stress that the object of bringing the uterus forward is not to cure the symptomless retroversion but to place the uterus at right angles to the vagina and so help to prevent recurrence of the prolapse.

I have performed this operation in nineteen cases during the past three years. This is a small number, but the severer degrees of prolapse are not common in young women, and in the minor degrees operation was not advised until after the menopause. The ages varied between 23 and 32; in ten of the cases vaginal fixation was combined with the anterior colporrhaphy, in one the colporrhaphy was supplemented by the Alexander Adams method of suspension, and in the remainder there was no associated backward displacement of the uterus requiring correction. The results have been uniformly satisfactory: there has been complete relief from symptoms, without any evidence of recurrence. One patient treated by the modified colporrhaphy with vaginal fixation has subsequently been delivered normally at term with no complications and no recurrence of the prolapse.

It seems presumptuous to suggest any improvement on that superb operation devised by Donald and Fothergill. Perhaps, however, its very success has led to its employment in cases for which it was scarcely devised, and, in view of its one limitation, the maintenance of the essential principles of the operation, but without its one possible disadvantage, may be worth consideration.

In conclusion it would appear that there is a very definite risk in pregnancy and labour after amputation of the cervix, and therefore, in the event of its being necessary to perform this operation on a woman liable to further pregnancies, she should be given instructions regarding the necessity for supervision during a subsequent confinement.

Summary

In gynaecology the necessity is stressed for subdividing cases undergoing surgical treatment into two groups—women of child-bearing age and those no longer capable of reproduction.

The literature of cervical amputation is reviewed, and various complications and harmful sequels of the operation are discussed.

A series of recent cases of repeated abortion following amputation of the cervix is reported.

A series of recent cases of dystocia following amputation of the cervix is recorded.

Methods of curing lacerated or diseased cervix, and prolapse, are suggested.

The technique of a new operative procedure for prolapse is given, with the results obtained.

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Betel-nut.—Anthelmintics containing powdered betel-nut should not be given in man, as the active alkaloid, arecoline, is easily absorbed in the intestine.—Anthelmintics containing Betel-nut. H. Schlegel.—*Arch. exp. Path. Pharmak.*, June 3, 1939, **192**, 389.

Clinical Memoranda

Pyloric Obstruction as a Sequel to Rammstedt's Operation

The following case seems of sufficient rarity and interest to be worthy of record.

CASE REPORT

A male infant, which I had delivered by Caesarean section six weeks previously, was admitted to the Fermanagh County Hospital on June 23, 1938, with a history of vomiting during the previous ten days. Its weight was then only 7 lb., whereas at delivery it weighed 7¼ lb. The diagnosis of congenital pyloric stenosis was easily made because of the presence of visible gastric peristalsis and a palpable epigastric tumour, together with the characteristic regurgitant vomiting.

A Rammstedt operation was done under local anaesthesia. The pyloric tumour was noted to be rather large, an incision of about one and a quarter inches being necessary. There were no post-operative complications and the vomiting ceased at once, while the weight steadily increased to 9 lb. 6 oz. by August 13, 1938, seven weeks after the operation. At this point vomiting was again reported, at first once daily but later twice a day. Alteration in the diet did not have any effect, and the general condition of the infant progressively deteriorated. On August 25 gastric distension and peristalsis were observed after a feed, followed shortly by vomiting, and recurrent pyloric obstruction was diagnosed.

The abdomen was reopened under a local anaesthetic, and it was seen that the pyloric tumour had completely disappeared, the pylorus had narrowed down to the size of a lead pencil, and the scar was now only about half an inch long. There was no kinking at the pylorus, neither were there any adhesions. A small amount of ether was found necessary before a posterior gastro-jejunostomy could be performed, and again, fortunately, there were no post-operative complications. The vomiting ceased, and the weight had risen to 11 lb. 12 oz. on October 13, when the child was discharged home. He is now nearly 18 months old and weighs 25 lb.

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Pneumococcal Meningitis treated with Sulphapyridine

The successful use of sulphapyridine (M & B 693) in a case of pneumococcal meningitis is here recorded.

CASE REPORT

A young man aged 23 was admitted to the Royal Infirmary, Edinburgh, about 8 p.m. on June 7, 1939, with a twenty-four-hour history of headache, vomiting, semiconsciousness, and finally delirium. On admission his temperature was 102°, pulse 90, and respirations 36.

On examination the pupils were contracted, but were equal and reacted sluggishly to light; there was marked neck rigidity; abdominal reflexes were absent; there was bilateral exaggeration of knee-jerks and ankle-jerks. Babinski's and Kernig's signs were also present bilaterally. The patient was delirious and very restless, so that he was under constant observation by two nurses for the first eighteen hours. Lumbar puncture was performed. The cerebrospinal fluid was under a pressure of more than 300 mm.; it was very turbid, and contained Gram-positive cocci, mostly in pairs. As the organism appeared to be a pneumococcus, an intramuscular injection of 1 gramme of soluble sulphapyridine was at once given, but it was not repeated during the night owing to the restlessness of the patient, which continued in spite of 1¼ grains of morphine and 1/25 grain of hyoscine in the first twenty-four hours.

The next day the organism was verified as being a pneumococcus, Type XIX. Lumbar puncture was performed the morning following admission, and after his bowels had moved the patient became less restless and was able to take 1 gramme of sulphapyridine orally, four-hourly. This dosage was continued for six days with no toxic effects, each dose being administered in milk in conjunction with 30 grains of sodium bicarbonate. The temperature fell to normal in forty-eight hours, and subsequently remained subnormal. The patient suffered from retention of urine during the first three days, but this was relieved by the administration of doryl hypodermically. On the second day after admission he was practically normal mentally and could give a clear history. By the tenth day neck rigidity had disappeared completely, and convalescence was uneventful save for persistent slight left-sided earache.

An interesting fact in this case is that the patient sustained concussion five years ago, resulting in the loss of hearing in his left ear. He has had attacks of left-sided earache since, and when examined on June 19 there were signs of an inner ear disease, which were suggestive of a direct intracranial spread of infection by way of the sheath of the eighth nerve. The accompanying table shows the course of the illness:

Day of Illness	No. of Lumbar Punctures	Quantity of C.S.F. Withdrawn	Appearance of C.S.F.	Cell Count per c.mm.	Total Protein mg. per 100 c.cm.	Chlorides mg. per 100 c.cm.	Globulin	Pneumococci Type XIX
		c.cm.						
1st	1 therapeutic	20	Very turbid					Present
2nd	3 ,,	70	,,	10,000	400	662	+ + +	,,
3rd	2 ,,	45	Turbid					
4th	1 ,,	30	Slight turbidity	250			+	Not present
5th	1 ,,	20	Faint trace of clot formation					
6th	1 ,,	10	Colourless	195	30	695	Slight increase	,,
7th	1 ,,	5	,,					
10th	1 diagnostic		,,	30			No increase	,,
20th	1 ,,		,,	25			,,	,,

I am indebted to Dr. J. D. Comrie for permission to publish this case.

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Pneumococcal Meningitis treated with Sulphapyridine

The following case of primary pneumococcal (Group IV) meningitis may be considered of sufficient interest to be placed on record.

CASE REPORT

On June 6, 1939, a healthy man aged 38 began to feel out of sorts, with headache and backache predominating. The headache was both frontal and occipital, and soon increased in intensity, causing loss of sleep. On the 8th he had diarrhoea and vomiting. He saw a doctor for the first time on the 9th, when the symptoms were thought to be those of an influenzal cold; his temperature was 103° and pulse 106. There were no physical signs in the chest.

On June 10 neck rigidity and a positive Kernig sign were observed. When I saw him on June 11 he was drowsy and looked toxic; his tongue was heavily coated with brown fur;

there was marked neck rigidity; Kernig's sign was positive on both sides; knee-jerks and ankle-jerks were absent; the blood pressure was 106/86, temperature 101°, and pulse 116. There were no physical signs in the chest, and the ear drums were normal. He had herpes at the inner end of the right eyebrow. A leucocyte count showed 15,400 cells per c.mm., 80 per cent. being polymorphs. A lumbar puncture was performed and turbid cerebrospinal fluid, under slightly increased pressure, was withdrawn. This showed 624 cells per c.mm., all polymorphs, and Group IV pneumococci were cultured. During the next twenty-four hours he took 9 grammes of sulphapyridine (M & B 693) by mouth; there was no vomiting. On June 12 the temperature was 100.6° and the pulse 100. The patient was still very drowsy and the tongue was dry and furred. Cerebrospinal fluid showed 4,200 polymorphs per c.mm.; pneumococci were present. During the next twenty-four hours 8 grammes of sulphapyridine were given by mouth.

On June 13 his temperature was normal and the general condition much improved. Cerebrospinal fluid showed 360 polymorphs per c.mm.; pneumococci were present. During the next twenty-four hours a further 5 grammes was given. On the 14th he was again drowsy and his tongue was still very dirty. The temperature was normal and the pulse 90. The cerebrospinal fluid was under very low pressure and contained a purulent clot; pneumococci were present. A leucocyte count showed 15,000 per c.mm. During the next twenty-four hours 5 grammes of sulphapyridine was given orally. On the 15th the temperature remained normal; the general condition again improved; the neck rigidity was less; knee-jerks and ankle-jerks were just obtained. The cerebrospinal fluid contained 104 polymorphs per c.mm.—culture was sterile. Altogether 27 grammes of sulphapyridine had been administered; the drug was now discontinued. Daily improvement was maintained and the temperature remained normal. The cerebrospinal fluid continued to be sterile and the cells gradually became fewer. On June 16 there were 108 polymorphs, and on the 18th 72 cells per c.mm.; lymphocytes were now reappearing. A leucocyte count on the 19th showed 11,400 cells per c.mm. On the 21st the cerebrospinal fluid was quite clear; pressure normal; 20 cells per c.mm., lymphocytes predominating. On the 23rd the patient looked and felt perfectly well; there was no neck rigidity and Kernig's sign was absent. On the 24th the cerebrospinal fluid was quite clear and the pressure normal; there were 8 cells per c.mm., all lymphocytes. A leucocyte count showed 8,600 per c.mm. Convalescence was uneventful.

COMMENTARY

A case of primary pneumococcal (Group IV) meningitis is described. Treatment was not begun until the fifth day of the illness: it consisted of repeated lumbar punctures and the administration of sulphapyridine by mouth, a total of 27 grammes being given. There was rapid response to treatment; in four days the cerebrospinal fluid was sterile, and within a fortnight it had returned to a normal cytology.

I am indebted to Surgeon Commander R. L. G. Proctor for the laboratory investigations.

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Royal Naval Hospital, Haslar. Surgeon Commander R.N.

Prognosis in Neuroses.—Schou finds that the prognosis in neurotic patients who apply for compensation or pension is much worse than in patients not so economically interested. In the two groups followed up from three to eight years afterwards the recovery rate in the former was only about 50 per cent., as compared with 88 per cent. in the latter. Though this may to some extent be due to the fact that those who apply for pension are more severely ill than those who do not, a more important factor is the unfavourable influence of a pecuniary interest in illness.—Laboratory and Catamnestic Investigations into So-called Neuroses. H. I. Schou.—*Acta Psychiat.*, Kbh., 1938, **13**, Fasc. 4, 383.

Reviews

WAR WOUNDS AND AIR RAID CASUALTIES

War Wounds and Air Raid Casualties. Articles republished from the *British Medical Journal*. With illustrations. Foreword by Lieut.-General Sir William MacArthur, K.C.B. (Pp. 256. 10s. 6d. net.) London: H. K. Lewis and Co. 1939.

The *British Medical Journal* has rendered a notable service in gathering together in a series of twenty-three articles a wealth of information upon war injuries gained in the last war. Only those who were engaged in that war from its earliest weeks to its conclusion can realize what a vast revolution in technique and in outlook is revealed in these articles, or by what slow and painful processes these methods were evolved. It is a necessary feature of all wars that their conditions should be altogether new, for surprise is the very essence of military strategy, but it means that the doctor as well as the soldier must be prepared to meet new problems and to face conditions which it is impossible entirely to foresee. In the present war it was the universal opinion that in its very first weeks we must be prepared to deal with many thousand casualties, and these not among the soldiers but among the civilian population. This terrible forecast has so far not come true, but no one can say what the future has in store. It would, however, seem certain that whatever happens we shall have to deal with large numbers of civilian casualties in addition to those which must inevitably occur in the field. Moreover, these casualties will for the most part be due not to gunshot wounds but to the effect of exploding bombs and falling masonry. We shall in fact be faced with conditions which in our experience are without precedent, although perhaps the war in Spain may give us some clue as to what to expect. It is, therefore, all the more important that we should have before us the experience of those who took part in the last war and who slowly evolved methods which we may use as a starting-point.

There are two things which impress one in reading these articles. The first is the astounding power of recovery of the human body if it is only given a chance. Wounds of the limbs which in former days would have meant immediate amputation, wounds of the abdomen which even to the boldest surgeon might well have seemed impossible, are handled as a matter of everyday routine and with complete success. The second thing which strikes one is the variety of methods adopted, each plainly depending upon the special skill of the surgeon who writes. Yet all these methods have but one aim in view: to remove all infection and all damaged tissue and place the part at rest. To one surgeon splints and extension are the whole secret of handling compound fractures, while to another a plaster case is omnipotent. To those, however, for whom these papers are intended such differences are not perplexing but are rather inspiring, for they surely point the way towards a success in the future still greater than that obtained in the past.

The articles deal not only with wounds but with the emergency medical services, psychological aspects of war, chemical warfare, and the effects of high-explosive shells and CO poisoning as one result. No one engaged in war service in any field can fail to gather from them information of vital importance to his patients, and we hope that no one will lose the opportunity.

H. S. SOUTTAR.

HEPARIN

Heparin: Its Chemistry, Physiology, and Application in Medicine. By J. Erik Jorpes, M.D. (Pp. 87; 16 tables; 12 figures. 7s. 6d. net.) London: Oxford University Press. 1939.

For a good many years after the discovery of heparin by Howell most investigators were doubtful whether it had any such physiological function as an anticoagulant as had been suggested for it by its discoverer. It was regarded rather as an artefact with useful properties than as a naturally occurring anticoagulant which might play a part in preventing intravascular clotting. In recent years much attention has been given to its study, especially in Best's laboratory in Toronto and in Jorpes's laboratory in Stockholm, and the result of these studies has been largely to confirm most of Howell's original views. Heparin seems to prevent the conversion of prothrombin into thrombin, by acting either on the prothrombin itself or on the kinase. Chemically it is interesting, as it is a polysulphuric ester of mucoidin and so related to some other polysaccharide substances with anticoagulant properties—that is, lignine sulphonic acids, chondroitin sulphuric acids, etc. All these have in common a high molecular weight and strong acidic groups. Owing to this property heparin is thrown out of aqueous solutions by such basic substances as toluidine-blue.

Heparin occurs not only in liver but in lungs, spleen, kidneys, and especially in the intima of the blood vessels, which stains purple with toluidine-blue in consequence. It is located in the Ehrlich mast cells which lie along the intima and which probably secrete heparin into the circulating blood. Injection of peptone into the blood stream causes a release of this heparin and so renders the blood incoagulable. Heparin is now obtainable in pure form and is highly active. It produces no general physiological effects, even on intravenous injection, and has many applications both in the laboratory and in the clinic. Among the latter the chief are its use as an anticoagulant in blood transfusion, either by heparinization *in vitro* or by heparinization of the donor, and its undoubted value in the prevention or treatment of thrombosis. Very striking are the results of intravenous heparin injections in thrombosis of the central vein of the retina; in some cases normal vision was restored, whereas most untreated cases progressed to blindness.

The book is well prepared, and, although rather academic, should serve to attract attention to a subject which has been somewhat neglected in this country.

CARE OF CANCER PATIENTS

Cancer Handbook of the Tumor Clinic, Stanford University School of Medicine. Edited by Eric Liljencrantz, M.D. (Pp. 114; 50 figures. 14s. net., 3.00 dollars.) London: Oxford University Press; Stanford University, California: Stanford University Press. 1939.

This book consists of material assembled for postgraduate instruction at Stanford University School of Medicine. Its aim is to present essential facts briefly and uncontroversially but in sufficient detail to equip practitioners for the efficient care of cancer patients through the stages of suspicion, diagnosis, consultation, and treatment. It is remarked, wisely, that educational drives to instruct the public are useless unless the family doctor, who usually first sees the patient, is prepared to act decisively when consulted. His efforts should be directed to the recognition of early cancer and the avoidance of all acts of commission or omission which might worsen the prognosis. The statements that the specialists likely to be called should be consulted before the course of treatment is decided and that hastily selected treatment often spells the doom of the cancer patient will receive approval. After short introductory discussions of the production of cancer, its habits of spread, methods of diagnosis, and the principles of radiation therapy, the book describes the diagnosis, treatment, and prognosis of the forms of cancer most commonly encountered. For the most part the advice given is in accordance with current practice in this country. The insistence on the desirability of, and indeed necessity for, biopsy will not meet with universal approval, but the authors carry out biopsy under conditions which permit immediate operation when necessary.

In some respects the book scarcely reaches the standard which might be desired for postgraduate instruction; some of the sections contain no more information than should be in the possession of senior students; others, while helping the practitioner to understand the rationale of treatment, should not be allowed to obscure the desirability of obtaining the most expert aid available.

MANAGING THE BABY

The Single-Handed Mother. By Lindsey W. Batten, M.B., M.R.C.P. With a preface by H. G. Wells. (Pp. 186. 5s. net.) London: George Allen and Unwin. 1939.

Dr. Lindsey W. Batten has hit on a new idea, and has found a novel way of helping *The Single-Handed Mother* by writing a book of this name, introduced and rightly praised by Mr. H. G. Wells, who confesses that this role is one he has not played in his not uneventful career. "No book can be a substitute for a doctor," states Dr. Batten, but this is the type of volume which the practitioner can confidently advise his maternity patients to buy and study before and after the arrival of the baby. The sections on breast-feeding are particularly good, and it is a happy feature that nearly double the space is given to natural methods of feeding than to the use of the bottle. A chapter on management is full of wise hints and sound advice. Two concluding sections called respectively "Bad Habits" and "Problems and Anxieties" will help many a mother to solve worrying puzzles of child development which are alarming rather than serious.

Dr. Batten's style is clear, his teaching definite and rational, and throughout the volume it is obvious that not only has the author a wide experience of children in health and disease, but he has lived in close contact with a nursery of his own, and he has a real appreciation of the difficulties which face the young mother who has no help and no expert nursing advice ready to hand. The volume deserves a wide circulation, and medical practitioners would themselves learn something from its contents.

AN EXPOSITION OF GENERAL PHYSIOLOGY AND BIOLOGY

Man the Slave and Master. By Mark Graubard. (Pp. 366. 10s. 6d. net.) London: J. M. Dent. 1939.

The "jacket" of Dr. Mark Graubard's book prints three enthusiastic testimonials—from Professor Lancelot Hogben, Dr. Paul De Kruif, and Sir Arthur Keith, who writes that the book is "worthy of Mr. J. B. S. Haldane at his best." Whether Professor Haldane would feel flattered by this comparison is a delicate question, but it may certainly be said that more than half of the book is an admirably clear exposition of the present state of knowledge of general physiology and biology; Professor Haldane himself could hardly write

a better elementary account of modern genetics. The chapters on anthropology and the history of culture also deserve praise. Of the remainder of the book we cannot speak so enthusiastically; it too frequently illustrates the truth of a remark made on page 343: "Saddening indeed is the remarkable intensification of arrogant intellectual cocksureness and ensuing intolerance in recent years." According to Dr. Graubard, scientific thinkers in biology, sociology, and anthropology first appeared in the second half of the nineteenth century. "Scientific thinking means in brief that if we desire to study any aspect of reality, information can be obtained only from a careful study of relevant facts" (p. 287). "Reality," we are informed (p. 68), is something of which man becomes aware "by means of sensations," and "sensations," according to page 67, are "arbitrary biological and psychological phenomena, products of our central nervous system." A few pages earlier Dr. Graubard wrote with some pity of the philosophers who had tried to answer such questions as—What is a sensation? How is it created? And "not without sadness and despair" of those who still studied their attempts. One such attempt was this:

> "The general character of sensation in all its forms is to be found in seeing that sense-perception is that which is receptive of the forms of things sensible without their matter, just in the same way as wax receives the impression of the seal without the iron or the gold of which it is composed and takes the figure of the gold or bronze but at the same time not as bronze or gold." (Aristotle, *De Anima*, ii, 12.)

This may not satisfy us; we may prefer the argument of Socrates (*Theaetetus*, 12 et seq.), but why dubbing sensations arbitrary biological and psychological phenomena should be thought a more scientific or successful attempt than those of Plato and Aristotle is not clear. The pre-scientific philosophers, again, were interested in human temperament and classified temperaments in many ways; modern psychologists have thought them not wholly wrong. Dr. Graubard, however, has no use for these distinctions. "By temperament," he says, "we mean the threshold of an individual's sensitivity." *Simplex munditiis.* It is not surprising that Dr. Graubard's anger is deeply excited by Freud, who, it seems, "displays an ignorance of biology amazing even in non-biological writers when he asserts that all instincts are associated with a feeling of pleasure." His "method of reasoning has nothing in common with science." "Freudianism is indeed unsound from the standpoint of biology, psychology, and anthropology. It is neither an approximation to truth nor a stimulating guess, but mere gossip and folly."

The fact that Dr. Graubard is not well acquainted with some departments of knowledge relevant to his theme does not, however, diminish the value of his exposition when he writes on subjects he understands.

DIETETICS

Diet in Health and Disease. Edited by Sir Humphry Rolleston, Bt., G.C.V.O., K.C.B., M.D., F.R.C.P., and Alan A. Moncrieff, M.D., F.R.C.P. The *Practitioner* Handbooks. (Pp. 383; 2 figures. 10s. 6d. net.) London: Eyre and Spottiswoode. 1939.

In the fourth volume of the series of the *Practitioner* Handbooks entitled *Diet in Health and Disease* is collected the series of articles which have appeared in the *Practitioner* on this subject, with an appropriate introduction by Professor Cathcart. The articles themselves have been revised and new matter added, and their collective value enhanced by a masterly survey of practical dietetics contributed by Professor Mottram. This first chapter is of absorbing interest and clarity and contains a special table of the vitamin and mineral values of protective foods which will be much appreciated.

The advance in scientific knowledge on the subject of nutrition has been so rapid that the busy doctor has no easy task in keeping pace with it. There must always be periods of delay between scientific discovery and its practical application. The first lag is between the laboratory and the general body of the profession, and the second between the doctor and the public. Anything which will shorten the first will have a still greater effect on the second. The need to improve the general standard of nutrition in this country is recognized as a national problem which will not be solved until the nation through the family doctor is familiar with the fundamental principles on which good nutrition is founded.

Most of us are familiar with the demand of the patient for rules of diet. Few of us can be satisfied with the advice we give or the list of "may take" and "may not take," however well they seem to serve the occasion. Too often the opportunity for instruction of the patient on intelligent lines is lost. This book should go far to remedy this state of affairs and will fill a long-standing gap on the doctor's bookshelf.

Notes on Books

All those who are wont to express strong views on the subject of the influence of the cinematograph on the minds of children should read RICHARD FORD'S *Children in the Cinema* (George Allen and Unwin, 7s. 6d.). As a rule these views are expressed with a violence in direct proportion to the ignorance of the subject. So far as we know this is the first occasion on which a careful survey has been made of the subject from all angles; and, taking things all round, it is quite clear that the cinema does more good than harm to children as a whole. Of course, there are a few children who are better for not seeing cinemas at all, more who ought not to go too often, others who should not go at certain periods of their life, and others for whom films should be very carefully chosen. It is clear, however, that children develop very strong views on what they like and what they won't have at any price. They go to special children's matinees to be entertained, and very properly resent any attempt at moral uplift under the guise of "a nice film." The real essential from the child's point of view is action, and "musicals" and child stars come a bad last in their order of preference. Such unbiased medical opinion as is available is quoted, and it is clear that films do not put ideas into children's heads which are not there already, though they may suggest methods of action whether these are desirable or not. All who are interested in children and/or in the films should read this book, and if they do it will command a very wide public.

Jordans Income Tax Guide, 1939–40 (Jordan and Sons, 116, Chancery Lane, W.C.2; 6d., by post 7d.) represents an attempt—and on the whole a successful attempt—to compress the essential facts with regard to income-tax assessments and allowances into the limits imposed by the low price charged for it. The second Finance Act of this year has laid down the rates of tax and alterations in allowances which will apply to 1940–1, and these changes have been set out in comparison with those effected in 1939–40. We doubt, however, the advisability of using the inside of the cover for that purpose instead of a sheet in the body of the booklet. One or two points might usefully be reconsidered for another edition. For instance, it is twice stated that income tax under Schedule A is payable in one sum on January 1, whereas since the rate was raised to 5s. 6d. last year some modifications of this rule have been in force for tenants paying tax and deducting it

from their rents; with the rise in the rate to 7s. this provision becomes somewhat important. In the notes on Schedule E, expenses are stated to be allowable if "necessarily" incurred in the performance of the duties; the statutory rule says "wholly, exclusively, and necessarily," which is rather more restrictive. In explaining surtax, it might be made clearer how the "income" surtaxed is arrived at—that expenses allowed for income tax are also allowable for surtax, and that such charges as interest are allowable for surtax.

John Wright and Sons, Ltd., of Bristol have published a seventeenth edition (making the 197th thousand) of Warwick and Tunstall's *First Aid to the Injured and Sick: An Advanced Ambulance Handbook*. It is edited by Dr. F. C. NICHOLS. The chief feature of this edition is the more complete account given of gas poisoning in warfare, with a new section on the civilian respirator, giving full details of the apparatus and of how to fit, use, and take care of it. The price is 2s. 6d.

That Mr. W. G. MCMINNIES'S *Signpost* is a useful guide to those seeking pleasant resting-places in the country is shown by its having reached a fifth edition. It will be all the more useful now that Continental resorts will be impossible for the present and immediate future. To a medical man such a guide is very helpful in choosing a place to which he can "evacuate" old, delicate, or nervous subjects. Helpful too for the doctor himself when he is lucky enough to obtain a holiday and sufficient petrol to reach one of these havens. A photograph of each recommended hotel is given, with a brief account of its special features, not omitting the important point of the tariff, about which so many books are coy. The index gives a list of the games and sports available at each. Altogether an attractive and practical work, illustrating the great improvements that have been made in the country hotels and inns since the dawn of the motor age. It is published by Simpkin Marshall at 3s. 6d.

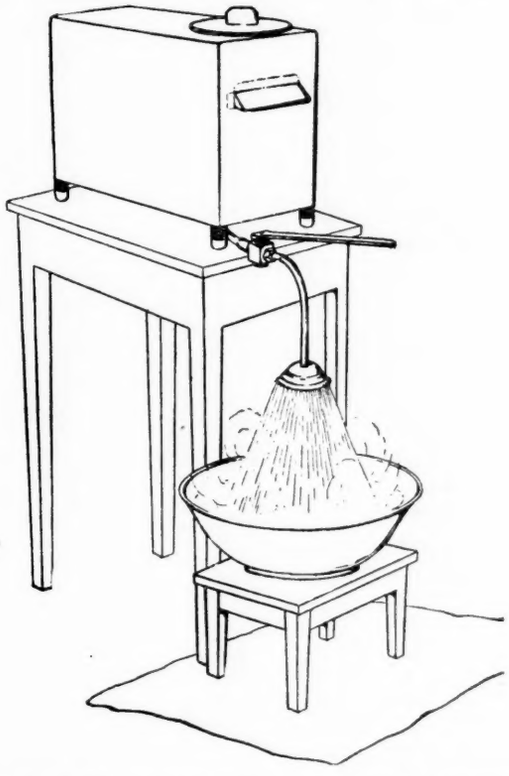
Preparations and Appliances

PORTABLE RESERVOIR WITH SPRAY

Dr. LACHLAN GRANT (Medical Officer, Ballachulish and Kinlochleven) writes:

I have been experimenting with an apparatus designed to afford in the patient's home, at the bedside, an aseptic wash somewhat comparable to that obtained at the elevated spray faucet of an operating theatre. The apparatus consists of a light rectangular-sided tank 20 inches long, 8 inches broad, and 12 inches deep, made of stainless steel or of vitreous enamelled metal, thus rendering it more impervious to corrosive lotions. The tank weighs about 10 lb., and has a capacity of four gallons. There is an opening in the upper surface large enough to admit the hand for cleansing the tank. This opening is also used for filling purposes, and is covered by an easy-fitting cap. A draw-off tap with spray outlet is fitted to the reservoir, and this tap is operated by means of a light aluminium lever handle easily detached and controlled when in use by the elbow. Another type of tap which may be fitted is an all-metal one with a hinged one-way joint. The latter is operated by raising or lowering the nozzle as required. The flow from both taps is by gravity only. The apparatus, which may be fitted into a case about the size of an ordinary midwifery bag, can easily be carried to the bedside. For use the tank should be filled with pure water at any suitable temperature. This may be done direct from a kettle or ewer. If a lotion is being employed this should be poured from a jug or may even be mixed in the reservoir. The cap having been replaced, the tank should then be elevated, to ensure the necessary gravity flow from the spray, by placing it on a small table or other support—a fairly large round or oval basin should be placed below the spray to collect the waste.

The apparatus is light, compact, and easily transportable by hand, cycle, or car. It obviates the risk always involved by washing in still water or lotion in a basin. The hands, or swabs, can be cleansed under a running supply of uncontaminated water or antiseptic lotion at the bedside. The water or lotion in the tank keeps warmer for a longer time and is less liable to aerial floral contamination than is the case with water or lotion lying exposed in an open basin. By washing under running water any gross or septic material from the skin surfaces flows away, and organisms are thus not



reapplied to the cleansed surfaces. An aseptic or antiseptic wash can be achieved with a minimum expenditure of fluid. This is also an advantage where water is scarce, in areas with low annual rainfalls or in other special circumstances.

The reservoir should be part of the armamentarium of any practitioner engaged in domiciliary midwifery or surgery, whether or not water is laid on in the houses at which he attends. It should also prove as useful to veterinary surgeons and to nurses in the course of their work. It might be installed in all motor and air ambulances where surgical or obstetrical emergencies may have to be dealt with, and it should form part of the equipment of all first-aid posts under A.R.P. schemes. Its usefulness in field dressing and casualty stations will readily be appreciated, as will its advantages to practitioners in the Tropics and aboard ship, on account of its economy of water. The tank has been made for me by Messrs. Archibald Young and Sons, Ltd., of Forrest Road, Edinburgh.

EPHYNAL

Ephynal "Roche" (Roche Products, Ltd., Welwyn Garden City) is a synthetic form of vitamin E; its chemical name is α-tocopherol acetate. This synthesis was achieved by Karrer in 1938 and hence represents one of the latest of the triumphs of vitamin chemistry. Animal tests have proved that the activity of the synthetic compound is equal to that of the natural form.

The importance of vitamin E has been proved repeatedly in recent years. Observers have claimed up to 80 per cent. of successes in the prevention of abortion. It is being tried tentatively in cases of male impotence and testicular atrophy. Beneficial results are reported also in the treatment of premature infants.

Nova et Vetera

SIDELIGHTS ON ENGLISH MEDICINE IN 1677-9

RECORDS OF THE EAST INDIA COMPANY

A Calendar of the Court Minutes of the East India Company for the years 1677–9, published under the patronage of His Majesty's Secretary of State for India (Oxford, 1938), contains interesting passages throwing additional sidelights on medicine in England in the last quarter of the seventeenth century.

Some Medical Worthies of the Age

The names of the following British doctors, probably long forgotten or unknown to the present century, occur in the pages of these original records.

Doctors who stood security to candidates seeking Company's service: (1) Dr. John Micklethwaite, Doctor of Physic. He stood security for John Blunden, factor (August, 1677). The same Dr. Micklethwaite was allowed in October of the same year to ship on "expectation" to the value of 100 pieces of eight on paying freight. (2) Dr. King stood additional security to James King, writer (August, 1677). (3) William Butler, a London apothecary, acted as security for James Butler (January, 1678). (4) Dr. John Archer, security for Reuben White, writer (January, 1678). (5) Dr. Samuel Annesley for Samuel Annesley, jun., a factor (March, 1678). (6) Dr. Edward Master, security for Henry Odinden, writer (December, 1678).

Doctors mentioned as stockholders of the Company: (1) Dr. Joseph Tayler in the year 1677. (2) Dr. Peter Barwick in the year 1679. (3) Dr. Elliot in the year 1679.

Examiner of candidates for appointment as surgeons in India before February, 1677: Mr. Page, surgeon. He was paid 20 shillings for examining two surgeons who were sent to India in the service of the Company.

Apprentices: Each surgeon going out to India was permitted to take only one apprentice, "a boy of 16 years and not under."

Handbook of Medicine, provided to Company's doctors: The Court directed the Secretary on January 2, 1678, to send to Fort St. George through Mr. Orde a copy of *Culpeper's Dispensatory*. "The Pharmacopiea Londenensis was translated into English in 1649 by the famous Herbalist and quacksalver Nicholas Culpeper" (Garrison). Salmon's *New London Dispensatory* was published in 1678.

The Company and Hospitals

Bethlem Hospital: The cellars of this hospital were leased to the East India Company for twenty-one years at £100 per annum. In May, 1678, the committee for pepper warehouse were asked to negotiate with the governors of Bethlem Hospital for the cellars proposed to be let out to the Company as regards "money to be spent on fitting for use and the clamour that may arise if the scent of pepper shall annoy patients."

The Hospital at Poplar: The origin of this hospital as gleaned from old records is summarized as follows in the Court minutes of the year 1679, in the course of a statement regarding the reasons for paying the minister and schoolmaster from the funds of the hospital.

"In 1625, the Court of Committee took into consideration means of relief for wounded mariners who had been maimed or fallen into decay in the Company's service and instructed their paymasters to deduct 2d. in the pound from all seamen's wages employed by them towards the said relief and in order the sooner to raise a stock, 2d. in the pound was also to be allowed by the committee, from their gratuities and from the salaries of all officers of the Company, only very poor men to be exempted from paying the said sum. This went on well, for on March 31, 1626, £60 were given into the hands of the treasurer, to erect a hospital for the relief of mariners."

In May, 1627, a suitable house in Poplar was purchased for £360 and then fitted with conveniences at a cost of £350. Twenty poor were to be maintained there. More money accumulated as time went on, through collections and through amounts bequeathed by employees of the Company. In 1679 there was nearly £3,600 in the hospital account in the books of the Company, and the committee ordered that a book should be maintained for the accounts and concerns of the hospital.

Vizagapatam. D. V. S. REDDY.

OSLERIANA

Sir William Osler was a great humanist, a fine teacher of clinical medicine which he based on morbid anatomy, and an excellent writer. The medical faculties in the Universities of McGill in Canada, of Johns Hopkins in the United States, and of Oxford in this country bear the impress of his culture and show that he was able to get things done without apparent effort. In each he made a tradition in medicine which is lasting and growing.

The *Bibliography of Sir William Osler's Publications*[1] is a key to his manner of working and shows how he attained his ends. It is based on Miss Blogg's chronological bibliography and is edited, revised, and indexed by Dr. Maude Abbott. Dr. Henry Barton Jacobs in his foreword tells for the first time the story of the origin and distribution of the well-known Osler plaque which was executed in Paris in 1903 (although Dr. Jacobs says 1905) by Mr. F. Vernon, the sculptor. The book also contains a reproduction of Mr. Seymour Thomas's portrait of Osler, which was painted in 1908. The volume is very useful for reference and will be greatly appreciated by the numerous friends who hold Osler in affectionate remembrance.

MEDICAL ICONOGRAPHY

Iconography is the study of the work of painters, engravers, sculptors, and medallists to portray the features of those who ought to be held in remembrance. Collectors of medical portraits have been many from the days of "the princely Mead" to our own times, but few have made a scientific study of their collections. Professor Richard N. Wegner of Frankfort-on-the-Maine, therefore, has broken somewhat new ground in his recently published *Anatomenbildnis*,[2] and has produced a useful book of reference, though he has limited himself to the great anatomists who lived after Vesalius and has written in somewhat difficult German. He has gathered together portraits of men whose names and works are more familiar than their personal appearance, and considers them from the artistic side as sixteenth century woodcuts, copper-plate engravings of the seventeenth century, etchings and lithographs of the later period. He gives well-executed examples of each method, with a short account of the individual and of the artist by whom he was portrayed. The method might well be adopted for portraits of the great physicians and surgeons, but it requires a knowledge of art, a technical acquaintance with the processes employed, and literary ability. The three qualifications are not often combined as they are in the person of Professor Wegner, so medical iconographers are not common.

[1] *Classified and Annotated Bibliography of Sir William Osler's Publications.* Edited by Maude E. Abbott, B.A., M.D., LL.D. Second edition. (Pp. 163; frontispiece. 2.25 dollars.) Montreal, Canada: The Medical Museum, McGill University. 1939.

[2] *Das Anatomenbildnis: seine Entwicklung im Zusammenhang mit der anatomischen Abbildung.* By Richard N. Wegner. (Pp. 199; 105 figures. 18 Swiss francs). Basle: Benno Schwabe. 1939.

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LYMPHOCYTIC CHORIOMENINGITIS

The five years which have elapsed since Armstrong and Lillie discovered the virus of lymphocytic choriomeningitis have seen a considerable advance in our knowledge of this virus and of its natural history. It was at first thought that this discovery had solved the problem of the aetiology of so-called acute aseptic meningitis. This belief was based on the facts that the first cases from which this virus was isolated presented the clinical picture of aseptic meningitis and that the changes evoked in experimentally infected animals were confined, so far as the central nervous system was concerned, to the meninges and choroid plexus; little or no involvement of the brain or cord occurred. It was not long, however, before doubt arose as to the validity of this assumption. Those cases from which the virus was first isolated in this country by Findlay, Alcock, and Stern[1] in 1936 had symptoms clearly indicating cord involvement. A fatal case described by Viets and Warren[2] in the following year showed definite encephalitic changes, and more recently MacCallum and Findlay[3] have recovered the virus from a patient whose clinical state might well have passed for poliomyelitis. Obviously this virus is capable of attacking both the meninges and the tissues of the central nervous system in man; acute aseptic meningitis is merely one of the forms the infection may assume. Furthermore, it seems clear from the investigations of Baird and Rivers[4] that all cases presenting the clinical picture of acute aseptic meningitis are not due to this virus, for in only a portion of the cases of this clinical type could they obtain evidence that the virus of lymphocytic choriomeningitis was the causal agent. It would appear, then, that the virus of Armstrong and Lillie can produce infections in man of varying degrees of severity, in some of which the meninges alone are involved, while in others there are deeper-seated changes in the central nervous system. And from what we know of other infectious diseases it would be expected that in addition to these clinically obvious infections milder atypical or even asymptomatic ones would occur. This, in fact, has been shown to be the case. Wooley, Armstrong, and Onstott[5] have found specific antibodies for the virus of choriomeningitis in the serum of individuals giving no history whatever of meningitis or encephalitis, and both Laigret and Durand[6] and Kreis[7] have observed that infection in human volunteers may result only in pyrexia and slight general symptoms. How widespread infection with this virus is in man we cannot say with any degree of certainty. The findings of Wooley and his co-workers certainly suggest that it is commoner than might be thought, for 11 per cent. of 1,248 sera from different parts of America were found to contain antibody for choriomeningitis virus. It is only by means of such serological surveys that a clearer idea of the extent of human infections with this virus will be obtained, and until recently the only test available for the purpose has been the neutralization test. Since this test entails the use of animals it is a relatively complicated procedure and therefore of somewhat restricted utility. But Smadel, Baird, and Wall[8] have now shown that a soluble specific antigen—separable from the virus itself—is present in the tissues of animals infected with the virus of lymphocytic choriomeningitis, and that the presence of antibody to this antigen in the serum of convalescent animals and human beings can be demonstrated by the complement-fixation test. Not only is this observation of much interest, since it parallels what has been found in some other virus infections such as rabbit myxoma and epidemic influenza, but it provides a relatively simple specific serological reaction suitable not only for the diagnosis of suspected cases but also for large-scale serological surveys.

The source of the human infections with this virus still remains unsettled; in fact, from the very outset the story has been a rather confused one. Armstrong and Lillie isolated the virus in the first instance from a monkey which had received monkey-passage material from a line of animals started with material from a human case of St. Louis encephalitis, and they also found serological evidence of infection with the virus of lymphocytic choriomeningitis in some other of their experimental monkeys, including one which had been infected with poliomyelitis. It was McNair Scott and Rivers[9] who first brought forward unquestionable evidence of having obtained the virus direct from human cases, though Armstrong and his colleagues had already shown that specific antibodies for the virus were to be found in man. Meanwhile Traub[10] had shown that this virus was responsible for a virulent epizootic in certain of his mouse stocks at Princeton. Rivers and McNair Scott[11] compared their strains of virus of human origin with those isolated by Armstrong and Lillie and by Traub, and

[1] *Lancet*, 1936, **1**, 650.
[2] *J. Amer. med. Ass.*, 1937, **108**, 357.
[3] *Lancet*, 1939, **1**, 1370.
[4] *Amer. J. publ. Hlth.*, 1938, **28**, 47.
[5] *Publ. Hlth. Rep.*, Wash., 1937, **52**, 1105.
[6] *C. r. Acad. Sci.*, Paris, 1936, **203**, 282.
[7] *La Maladie d'Armstrong, Chorioméningite Lymphocytaire*, Baillière et Fils, Paris, 1937.
[8] *Proc. Soc. exp. Biol.*, N.Y., 1939, **40**, 71.
[9] *J. exp. Med.*, 1936, **63**, 397.
[10] *Science*, 1935, **81**, 298.
[11] *J. exp. Med.*, 1936, **63**, 415.

showed that they were all serologically identical. Similar infections in laboratory mouse stocks have since been described in different parts of the world, and we know from the important investigations of Traub[12] that the virus is present in the urine and nasal secretions of the infected animals, and that infection can occur in intra-uterine life.

It would seem clear, both from the work of Traub and of others, that infection in mouse stocks due to this virus may be of varying virulence, sometimes even wholly inapparent, so that the greatest care must be taken to ensure that the mice used for experimental work are free from natural infection. The possibility that the mouse was the source of human infections was early considered. Rivers and McNair Scott[11] discussed this possibility, and inclined rather to the view that infection of laboratory mouse stocks was more probably of human origin. But recent work by Armstrong and Sweet[13] indicates that human infection from mice is far from being a remote possibility. They have demonstrated the presence of the virus of lymphocytic choriomeningitis in three out of five mice trapped in two houses, in both of which a human case of choriomeningitis had occurred. And since the interval between the patient falling ill and being removed to hospital was only four days, it seems unlikely, to say the least of it, that the mice had contracted their infection from the human cases. A rodent source of infection in some human cases is therefore more than likely, and this probability is heightened by the fact that human cases occur either singly or in small isolated groups with little or no indication of man-to-man spread. This, however, might be more apparent than real, for we do not know what percentage of the infected develop clinical disease, and the possibility that man-to-man infection does occur can by no means be ruled out. Recent observations by MacCallum and Findlay do, in fact, support this possibility. They have isolated the virus from the nasopharynx in one case even some weeks after recovery, and if the virus is commonly to be found in the nasopharynx, persisting in that situation in some cases after recovery, spread by droplet infection will almost certainly occur.

Reference has been made to the fact that only a proportion of the cases of acute aseptic meningitis appeared to be due to the virus of choriomeningitis. One would expect, none the less, that those not due to the Armstrong-Lillie virus would be of virus aetiology. A recent paper by MacCallum, Findlay, and McNair Scott[14] brings some confirmation of this, for from two cases of the Wallgren clinical type the authors isolated a virus which, though resembling the virus of choriomeningitis, differed from it in certain respects. This new virus had the same animal pathogenicity range as the Armstrong-Lillie virus, and it produced the same pathological picture in the animals. But it was unrelated serologically to choriomeningitis virus, and from preliminary filtration experiments appeared to be about three times as large. This latter observation suggests that the new virus is not just a new serological type of choriomeningitis virus, and the authors suggest for it the name of "pseudo-lymphocytic choriomeningitis." It is not absolutely clear from the findings, as MacCallum and his colleagues admit, that these two strains of the new virus were of human origin, but further work will no doubt clear up this question and settle its relation to the virus of Armstrong and Lillie.

[12] *J. exp. Med.*, 1939, **69**, 801.
[13] *Publ. Hlth. Rep.*, Wash., 1939, **54**, 673.
[14] *Brit. J. exp. Path.*, 1939, **20**, 260.

FINANCIAL SURVEY OF LONDON HOSPITALS

The King Edward's Hospital Fund for London has issued a "Statistical Summary"[1] of the income and expenditure of the 146 voluntary hospitals in its area, which covers a radius of eleven miles from St. Paul's Cathedral. In ordinary times we should have seized upon these 115 tables, each table with about twelve columns of figures in which receipts and costs and work done are analysed to the accuracy of fractions, and have brought out some interesting and perhaps useful comparisons and contrasts. But as it is these figures come like an echo from a forgotten world. It seems incredible, as so many other things do, that six months ago these precise allocations and balances were matters of enormous interest to those in charge of hospital administration. A whirlwind has now scattered these statistics, and many people are wondering whether the old hospital structure, so ramshackle and yet so easy to find one's way about in when one got the clue, so full of anomalies and yet so manifestly working to the public good, will ever be reassembled. To vary the figure of speech, the lights have changed at the crossing, and before they come back to green the road ahead may be very different from what it was before. Some are even asking whether voluntary hospitals as we have known them can survive. Take, for example, the last table of all in this compilation, giving particulars of pay-beds, their number, description, and weekly charges. The highest charge of all—at one of the teaching hospitals—is fifteen guineas a week, but three other teaching hospitals and one non-teaching charge twelve guineas for some of their private beds. The more usual charge starts from a minimum of six guineas at the teaching hospitals and four guineas at the smaller general and special hospitals. In the economic readjustment which will follow the war one wonders whether enough people who can afford these sums will be found to occupy the 2,200 such beds which are available. On the other hand, the hospitals are making no exorbitant profits from their pay-beds. The

[1] King Edward's Hospital Fund for London, 10, Old Jewry, E.C.2. (1s. net; 1s. 5d. post free.)

expenditure on pay-beds in 1938, taking the whole 146 hospitals, was £389,339 as against a revenue of £464,976, a profit of about £34 per bed, which may not be unreasonable. If each bed is occupied by twelve patients in the year it means that the hospital makes only about £3 per patient.

London hospitals in this last pre-war year were not in a very comfortable financial situation. Of the teaching hospitals only the London, Charing Cross, and King's College had surpluses, and of the nine hospitals without medical schools but with a complement of 200 or more beds, all had deficits. The smaller hospitals seem to have been more prosperous. Of twenty-nine general and cottage hospitals with fewer than eighty beds eighteen had surpluses totalling to £23,000, and although the other eleven had deficits the aggregate of deficits was not more than £5,000. In voluntary gifts also the smaller hospitals on the whole seem to do better than the larger. Thus the gifts to the "big twelve," although they amounted to half a million pounds, were down by £18,000 on the amount received in 1937, whereas all the other hospitals combined managed to maintain their voluntary gifts at practically the same level for 1938 as for the year before.

But the service which the voluntary hospitals render stands out impressively from these figures. In their 19,000 beds they gave treatment last year to 300,000 in-patients, while their out-patients numbered two million. To-day they are playing, or have made themselves ready to play, an important part in the war emergency scheme. Buildings have been adapted, equipment overhauled, staff enlisted and trained. Although the Government is contributing towards the cost of beds reserved for casualties, the hospitals are still, as they were before the war, largely dependent on voluntary contributions for the maintenance of adequate provision for the civilian sick. Their restoration to normal activity with the declaration of peace will again call for large expenditures, and in the meantime the national purse will have been impoverished, and the appeals for those actually suffering in the war will be severely competitive with ordinary hospital appeals. In recent years some of the ablest brains in medicine and in the business world have been devoted to hospital organization in the belief that the voluntary principle was worth cherishing. They will be needed even more in the years ahead, if the system is to continue within a new social order.

THE HEALTH OF LONDON BUSMEN

The evidence before the Court of Inquiry appointed to examine the stoppage of the London Central Omnibus services in 1937 showed clearly that there was a widespread feeling among the busmen that the conditions of their work were injurious to health. The Court, however, concluded that no satisfactory proof of that belief had been placed before it but that there was certainly a case for investigation. Accordingly the Minister of Labour arranged for the subject to be fully reviewed by representatives of three bodies—the London Passenger Transport Board, the Transport and General Workers' Union, and the Medical Research Council (whose representatives were Sir David Munro and Dr. Bradford Hill), under the chairmanship of Sir John Forster. The results of their deliberations, now published,[1] show clearly that great pains have been taken both to assess any specific effects that the working conditions may have upon health and to suggest practicable means of ameliorating them. All the available statistical data relating to the health of drivers and conductors have been examined, the actual conditions of work have been surveyed, the present-day views of the men's representatives on those conditions have been elicited, and a considerable body of expert medical opinion has been taken upon the conditions which might be regarded as especially conducive to gastric disorders—the forms of illness to which the busmen say they are particularly liable. The statistical evidence is admittedly limited, and though the members of the committee were able to make some slight additions to it they were unable to suggest any method by which it could be placed upon a really precise basis. Figures relating to the time lost by the bus crews from illness of all kinds showed no material change in the incidence of illness between 1931 and 1938, in spite of the increasing density of traffic in this period and the men's argument that the "intensity of their work" had consequently risen. If the nervous tension involved in the busmen's duties has increased, as might well be believed, it is not reflected in the available figures relating to sickness absenteeism. On the other hand, Bradford Hill's report to the Industrial Health Research Board[2] showed some relative excess of gastric illnesses among the London bus workers compared with the tramway workers, and a similar result is shown in a comparison made in the present report between the bus drivers and conductors and the maintenance workers in the London Passenger Transport Board's employ at Chiswick. Exploring, in the light of the medical evidence given, the features of bus work that might lead to such a susceptibility to gastric illness, the report lays particular stress upon two factors —namely, the irregularity of the hours of work and meal times, and the nervous tension that may be involved. With regard to the first, the irregularity is indeed marked. The men's shifts of duties change as frequently as every week. A more stable system unfortunately introduces other disadvantages — for example, a prolonged period of work on heavier duties —but, impressed by the medical evidence placed before it on this point, the committee suggests that the Board and the Union should consider whether less frequent changes are not in fact practicable. It also concludes that some spells of duty are definitely too long, and earlier meal reliefs in such cases should be aimed at. The times allowed for meals were not, it seems, specifically complained of by the busmen, but,

[1] Ministry of Labour. *The Health of London Central Busmen.* H.M. Stationery Office. 1s. net. Pp. 49.

[2] Report No. 79. An Investigation into the Sickness Experience of London Transport Workers, with Special Reference to Digestive Disturbances. 1937.

in view of their statements relating to the general strain of their work and the medical evidence relating gastric illness to nervous anxiety and temperament, a reduction is suggested in the number of meal periods at present affording less than forty minutes. For similar reasons much stress is laid upon the importance of proper rest pauses between journeys, which, it is advised, should be kept habitually in view in the construction and revision of working schedules. By such means nervous and physical fatigue might well be reduced. On the more debatable question of the advisability of a reduction in the hours of work no conclusion was reached, and no evidence could be obtained to show whether any part in the production of gastric illness is played by the absorption by the men of carbon monoxide and other fumes.

The omnibus services are a necessary part of London's life and give employment to a large body of men—some 20,000 drivers and conductors alone. Their health is an important problem in industrial medicine. Although highly abnormal conditions of work unfortunately prevail now—some of which will probably decrease and some increase the demands made upon the men—it is to be hoped that the parties to the industry may still be able to take cognizance of the proposals made in this report and to act upon them so far as is possible.

PERURETHRAL PROSTATIC RESECTION

Twenty-nine valuable papers by American and British writers[1] throw much helpful light on the question of perurethral resection of the prostate, often less correctly called transurethral resection—less correctly because the resection is done through, not across, the urethra. The perurethral route for attacking the prostate is originally European and over 100 years old, but the modern method of removing prostatic strips by means of an electric current passed through a wire loop is American and but ten years old. To American enthusiasm also is due the credit for popularizing this operation. The almost irresistible force of this enthusiasm met an almost immovable object in Europe's perhaps too stolid conservatism. The result was generally beneficial, for, on the one hand, unprogressive complacency was stirred, and, on the other, to reverse and revise Canning's dictum, the Old World was called in to redress the prostatic balance of the New. However, several articles in this excellent symposium show that criticism of perurethral resection is by no means confined to this side of the Atlantic. For instance, the uninitiated might conclude from the fact that one large American clinic employs the perurethral route almost exclusively that this route is the best, or that this particular clinic considers it the best. Actually, an illuminating American comment provides an alternative explanation of this apparent preference: "The urological department has hitherto been purely a diagnostic clinic, with its members neither trained nor allowed to perform surgical operations. It is easily seen, therefore, why this clinic does only transurethral procedures." Further shrewd comment, referring to the average stay in hospital after perurethral resection as being from three to seven days, contrasts this period with that of healing, which takes at least three weeks, and, in partial explanation of the fantastically low mortality reported from some quarters, points out the natural tendency of statistical mortality rates to be low in proportion to the shortness of the stay in hospital. Thus, deaths from cardiac failure, sepsis, pneumonia, embolism, etc., which are included in the mortality statistics of suprapubic prostatectomy, are not included in those of perurethral resection owing to the patients' previous departure from hospital. Again, transatlantic authors quote the statistics of life insurance companies, which show that "of 100 men at the age of 60, about thirty will die before they reach 70 years of age. In other words, the average mortality will be 3 per cent. each year, though less of course in the early sixties and greater in the late sixties. Between the ages of 70 and 80 the mortality will average 5 per cent. each year." These figures are intended "to give heart to those who have a mortality from any surgical procedure and to warn those whose mortality rate for transurethral resection is soon going to be less than the expected unmolested death rate." Two further criticisms are that whereas perurethral resection has not eliminated any of the previous complications of prostatic surgery it has added one—urinary extravasation from a ruptured bladder—and that the new operation has been followed by a greatly increased sale of penile clamps for incontinence. Such refreshing candour does much to counterbalance the extravagant claims made for perurethral resection, which nevertheless has won for itself an undeniable place in prostatic surgery, more especially in the treatment of the smaller enlargements of the prostate, particularly those of the "middle lobe"; of the various fibrotic affections of the bladder neck, including the so-called median bar; and of certain prostatic carcinomata.

[1] *Urol. cutan. Rev.*, Feb., 1939.

CONSERVATIVE TREATMENT OF GAS GANGRENE

Hitherto radical surgery, chiefly in the form of early amputation and the provision of widespread drainage, has been considered essential in the treatment of gas gangrene, but it now appears that a change in this viewpoint may be desirable. It has been claimed that combined irradiation with *x* rays combined with sulphanilamide therapy may so control the infection as to render amputation or even surgical measures of any kind unnecessary. The most recent support for this claim is made in a paper by R. L. Sewell[1] of Rochester, New York, who states that J. F. Kelly in 1933 was the first to advocate irradiation in gas gangrene and that Kelly's and other collected cases which have been treated by irradiation now number 160 with fourteen deaths (8.8 per cent.). There are obvious difficulties in making a comparison between radical and conservative treatment, inasmuch as amputations are performed only in the fulminant case, whereas in any particular instance infection is not always proven, as positive cultures of *Clostridium welchii* may be the result of

[1] *Surgery*, 1939, **6**, 221.

contamination of wound exudate. Moreover, where several measures—such as injections of serum and irradiation and sulphanilamide—are used, it is not possible to decide how effective any single one of these is. It is quite likely that the effect of sulphanilamide on the secondary streptococcal infection plays an important part. Further work on the conservative treatment of gas gangrene is needed.

"THE BEST PHYSIC"

The organized public health services of the present day safeguard the citizen of any modern well-directed community against many bodily ills which would otherwise beset him. This security, though good, is not all, for it still depends upon the manner in which the individual orders his life whether he attains to that degree of health which makes life worth living. It is thus the fate and duty of every man to be to some extent his own doctor. This theme is developed by Dr. V. Heiser in his most recent work.[1] He aptly expounds his doctrine both by precept and by the example of his own experience, for, as he quotes from Bacon, "a man's own observation, what he finds good of, and what he finds hurt of, is the best physic to preserve health." Yet in the case of food, even where a man finds hurt, he may be slow to change. Age-long racial food habits, no matter how injurious, have a tendency to persist. Immigrants to the United States, Italian, Chinese, Spanish, or Russian, learn a new language more quickly than a new diet. In the matter of beverages too there may be the same unreasoned tenacity. England is a tea-drinking country not because she thinks that tea is best but in consequence of the early tea monopoly of the East India Company. Her daughters, Canada, Australia, and New Zealand, have dutifully followed her example. The people of the United States, who prefer coffee, do so not because coffee is essentially better but because the Boston tea-party turned them against tea. As regards exercise it is Dr. Heiser's view that most people do not get enough of it mainly because their daily work does not compel them to take it. He himself, when in New York, goes for a half-mile swim at his club before breakfast, and in the country he plays tennis. He admits that golf has a longer outdoor season than either tennis or swimming, and that it possesses the merit of drawing a man from drinking and smoking in the clubhouse into the air and sunshine, but he accounts it an old man's game. Bicycling and horse-riding win his approval. Of fishing, the tarpon and the trout excepted, he has no great opinion. He favours the practice of skating, and recalls with pleasure—as who would not?—the charm of ice-waltzing in Canada on gala nights of winter. The author rightly claims credit for American air-conditioning with its finely adjusted thermostatic and other controls. He cites as its crowning achievement—or last straw—that in a Chicago theatre, when a bouquet of roses is thrown upon the stage, a charge of essence of rose is simultaneously injected into the main air-intake duct, so enabling the entire audience to share the fragrance! As Dr. Heiser lives robustly so also he writes robustly, bringing to his task that *mens hilaris* which, according to the mediaeval adage, is one of the three basic requirements for self-doctoring.

[1] *You're the Doctor.* By Victor Heiser, M.D. London: Jonathan Cape. (8s. 6d.)

VITAMIN E

A booklet entitled *Vitamin E* gives the record of a symposium held last April under the auspices of the Food Group (Nutrition Panel) of the Society of Chemical Industry. This is a collection of papers on vitamin E given by workers who are themselves engaged on the researches reported. The chemical structure and properties of tocopherol were dealt with by Professor A. R. Todd, Professor P. Karrer, Dr. A. Emmerie, Dr. Lester Smith, and Mr. R. Bailey. The physiological action of vitamin E and the consequences of vitamin E deficiency were dealt with by Professor J. C. Drummond, Dr. Karl E. Mason, Dr. S. W. F. Underhill, Dr. T. Moore, Miss A. M. Copping, and Mr. A. L. Bacharach. The clinical and veterinary uses of wheat-germ oil and vitamin E preparations were dealt with by Dr. P. Vogt-Möller, Dr. E. Shute, Dr. D. W. Currie, Dr. C. Macdonald, and Professor F. J. Browne. The academic work on vitamin E is proceeding rapidly, but it is greatly to be regretted that so little controlled work on the clinical use of vitamin E has been carried out. In spite of the claims of some clinicians to have obtained good results from the treatment of habitual abortion and threatened abortion (what exactly is the stage of threatened abortion that yields to a dose of vitamin E?) by prescribing vitamin E, it remains to be shown how many women after one or two abortions have produced a living child without any vitamin E therapy—only then can it be determined whether vitamin E is essential for the human mother as it is for the rat. The booklet is obtainable from the general secretary of the Society of Chemical Industry, Clifton House, Euston Road, N.W.1, at the price of 5s., post free.

We are asked by the Medical Research Council to point out that the pamphlet *Blood Transfusion Outfit*, to which reference has been made in several recent communications to the medical journals, is not a publication in the ordinary sense and has not been placed on sale. It is merely a memorandum of instructions relating to the particular forms of apparatus for taking and giving blood which have been supplied to the four Emergency Blood Transfusions Depots in the Home Counties and to various hospitals in the London sectors. It has been printed as a matter of convenience for distribution to blood transfusion officers at the centres to which its applicability is limited.

The Thomas Vicary Lecture will be given at the Royal College of Surgeons of England by Sir Walter Langdon-Brown on Thursday, November 30, at 3 p.m., and the Bradshaw Lecture by Sir James Walton on Thursday, December 14, at 3.30 p.m.

The next session of the General Medical Council will open on Tuesday, November 28, at 10 a.m., when the President, Sir Norman Walker, M.D., will take the chair and deliver an address.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

BURSITIS

BY

L. R. BROSTER, O.B.E., M.Ch., F.R.C.S.

A bursa may be defined as a cavity lined by serous membrane. Bursae are formed either by dilatation of the lymphatic spaces or as a result of a localized effusion into the tissues. They contain a small quantity of serum. Their primary function is to permit of free movement and lessen friction between the hard and soft tissues of the body, especially where such movement is subjected to pressure. They exist as normal structures in many parts of the body—in the subcutaneous tissues over freely moving parts, over such bones as the patella or olecranon, or in the region of joints under the tendinous insertions of strong muscles. In the latter position a bursa may be formed by a hernial protrusion of the synovial membrane of the joint, and will then be in free communication with the joint cavity. It is important, therefore, to determine whether such a bursa has been involved either primarily, or secondarily by direct extension from the joint, by any pathological lesion.

Normal bursae occur at certain places with fairly regular anatomical accuracy, such as the prepatellar bursa and the olecranon bursa. On the other hand, where the soft tissues overlying bony prominences are subjected to exceptional and intermittent pressure secondary or adventitious bursae are formed. Structurally these bursae are similar to normal bursae except that their walls become thick and fibrous from prolonged irritation of the soft tissues, and the lining becomes shaggy and polypoid, especially from deposits of fibrin and unabsorbed blood clot. Adventitious bursae may occur in unexpected parts of the body, and are more constantly found among workers in special occupations. Thus large subaponeurotic bursae may be found under the scalp of Billingsgate porters and those who are accustomed to carrying baskets on their heads.

The so-called Covent Garden "hummy" is a bursa over the vertebra prominens. Tailors acquire bursae over their external malleoli from sitting with their legs crossed. Deal runners develop a bursa over their shoulder. Among non-occupational bursae the most numerous are those of the feet resulting from pressure by badly fitting shoes. The best example of this is the adventitious bursa which develops in association with hallux valgus. Here a bunion results from pressure by the shoe on the exposed head of the first metatarsal, and a bursa forms between the hardened skin and the calloused bone. Similar bursae occur over all bony prominences arising from malformations or displacements. For instance, a bursa may develop over the cuboid in talipes equinovarus. A particularly painful type of bursa is the one which forms under a hard corn. The typical position is over the head of the first phalanx in hammer toe or over the corresponding points of the three outer toes when these are in a flexed position. These little bursae are liable to infection, which may spread to the joint or bone. Unless the pressure is removed recurrent bursitis ensues.

The treatment is to pare off the corn, expose the bursa, and cauterize the bursal endothelium with carbolic on a sterile tapered match-stick, or excise the corn and bursa under local or gas-and-oxygen anaesthesia. Perhaps the classic example of an adventitious bursa due to a friction of soft tissues over bone is the one which forms over the cartilaginous cap of a cancellous exostosis. This should be removed at the same time as the exostosis. A small bursa sometimes appears over the head of the radius, and results in pain. It is mentioned as one of the causes of the so-called "tennis elbow." Bursa formation may also take place when hard structures such as cartilage or bone move over soft parts. Examples of this type occur under the hyoid. A bursa here may be mistaken for a midline dermoid or a thyroglossal cyst. A bursa may also form under the movable scapula, between it and the chest wall. The bursa is apt to become very large and to give difficulty in diagnosis.

Diagnosis

As a result of continued irritation and trauma a bursa becomes distended with fluid; it is hot to the touch, and tender and painful when the part is moved. The skin covering it assumes a dusky red colour, and is movable over the bursa. On palpation there is fluctuation, and when situated superficially it transilluminates. When grasped between the fingers it is not freely movable owing to attachment to the underlying bony prominence. When bursitis is recurrent the walls of the sac become thick and fibrous, the lining membrane shaggy and polypoid. This perhaps is the most common condition. It is not unusual for haemorrhage to take place in a bursa, and deposits of fibrin and old blood clot adhere to its walls and cause obliteration of the cavity. In these circumstances the bursa becomes more solid to the touch, and fluctuation and transillumination will not be obtained. Haemorrhage is more likely to take place in the blood diseases and in haemophilia. When bursae are deep-seated and large their diagnosis may be doubtful. In these cases a needle of fairly large bore should be inserted and the typical fluid aspirated.

The Principal Bursae

The following is an account of the more important bursae which are encountered in the various parts of the body. In the region of the knee-joint, a particularly movable part, they are numerous.

Prepatellar Bursa.—Normally two or three sacs lie in front of the patella. When exposed to irritation by friction, fluid is secreted and the bursa becomes distended. It presents itself as a globular swelling over the patella about the size of half a tennis ball. The skin covering it is warm and red; it fluctuates and transilluminates. It is fixed to the patella, and if the quadriceps is relaxed the patella will move from side to side when the bursa is moved. If the swelling forms over the proximal portion of the patella the condition is known as "housemaid's knee"; if the swelling appears over the distal portion of the patella or over the patellar ligament, it is commonly known as "parson's knee." These bursae arise over that part which is most exposed in kneeling. Old charwomen from their occupation are particularly apt to develop the chronic fibroid form of prepatellar bursitis: as this bursa is liable to gummatous infiltration a Wassermann test should be done to differentiate the two.

The subpatellar bursa lies under the patellar ligament, and partly over the head of the tibia and the knee-joint, with which it does not communicate. It shows as a bulging on either side of the patellar ligament with the knee in full extension, and the patient cannot stand with the leg fully extended. It may push the ligamenta alaria backwards into the joint and simulate the condition of an internal derangement of the internal cartilage or a loose body in the joint.

The subcrureus bursa, when present, communicates with the suprapatellar synovial pouch and really forms part of the knee-joint. Its secretion of fluid will therefore run *pari passu* with that of the joint, and its presence is determined by an exaggerated fullness in the region of the suprapatellar pouch.

The semimembranosus bursa lies between the insertion of the semimembranosus tendon and the inner head of the gastrocnemius. It presents as an oval fluctuating swelling limited on its outer aspect but more free and less defined towards the inner aspect of the popliteal space. As in the majority of these periarticular swellings, it becomes tense in extension and flaccid on flexion of the knee. Enlargement of this bursa is often secondary to an intra-articular lesion, such as osteo-arthritis or tuberculous disease, and the condition of the joint should be ascertained before treatment is undertaken. Owing to its proximity to the popliteal vessels it may push the artery superficially, but the pulsation is not expansile in character as in aneurysm.

The popliteal bursa is a bursa arising from the synovial membrane of the knee-joint surrounding the intra-articular portion of the popliteal tendon. It gives rise to a rounded swelling behind the external condyle of the femur deep to the biceps tendon and the ilio-tibial band. It has to be differentiated from a bicipital bursa, which lies lower down between the biceps tendon and the external lateral ligament. Both these swellings may be mistaken for a cyst of the external cartilage.

A bursa is sometimes found beneath the insertion of the semitendinosus and gracilis, and produces a swelling over the upper and inner surface of the shaft of the tibia.

The psoas bursa lies between the tendon of insertion of the psoas muscle and the hip-joint, with which it usually communicates. Distension of this bursa gives rise to a deep-seated swelling presenting on the inner side of Scarpa's triangle. It is tense on extension of the hip-joint and flaccid on flexion. When painful it is the cause of flexion of the thigh, one of the symptoms associated with psoas abscess and hip-joint disease. Before any question of aspiration is entertained it must be remembered that an obturator hernia produces a swelling in this region. An enlarged psoas bursa may be found in association with osteo-arthritis of the hip-joint and tuberculous disease.

Subgluteal Bursa.—This bursa lies between the tendon of insertion of the gluteus maximus and the great trochanter of the femur. It is present in the condition known as clicking or snapping hip. When painful it causes abduction and eversion of the lower limb, a symptom seen in the first stage of tuberculous disease of the hip-joint, from which it should be differentiated. Indeed, the bursa itself is apt to be the seat of tuberculous disease quite independently of this infection within the joint. Owing to the lax muscular planes in this region the bursa may become enlarged, and if abscess formation takes place it burrows extensively among the lax tissues.

Ischial bursae when painful must be removed, and the chronic form of bursitis here must be differentiated from a gummatous bursitis, as this is one of the bursae liable to specific infection.

In the region of the *tendo Achillis* two bursae resulting from shoe pressure may be found. There is a bursa between the skin and the Achilles tendon, which is liable to infection from continued rubbing and excoriation of the skin over the heel. The other bursa is deeper and lies between the insertion of the Achilles tendon and the upper part of the posterior of the os calcis. It gives rise to a soft swelling on either side of the tendon. It is prone to tuberculous infection. It does not communicate with the ankle-joint, but may simulate an arthritis of this type in that region. The swelling, however, remains localized. In the upper limb there are only two bursae of any consequence.

The olecranon bursa is commonly found among miners and students. It forms a red, painful, fluctuating, and translucent swelling over the olecranon process, and does not communicate with the elbow-joint. It is particularly exposed to trauma. Septic infection may cause superficial necrosis of the bone, but it is unlikely to spread to the joint.

The subdeltoid bursa is situated between the deltoid muscle or the acromion process and the great tuberosity of the humerus, and does not communicate with the shoulder-joint. It causes an increased fullness to the rounded contour of the deltoid, but does not transilluminate, because of the thickness of this muscle. When painful it restricts the movement of abduction. It is liable to gonococcal and tuberculous infection.

Treatment of Simple Bursitis

In treatment the first consideration is to obviate or prevent any cause of irritation or pressure that has given rise to the bursitis, with the object of preventing a recurrence, which leads to chronic bursitis. In superficial bursae particular attention should be paid to the condition of the skin. If chapped and dirty or cracked it should be thoroughly cleaned with ether soap and disinfected with spirit or iodine for at least twenty-four hours. Neglect of this simple precaution may be fraught with serious consequences. Bursae have a rich supply of lymphatic vessels, which become dilated in simple bursitis. Organisms from a hidden focus in the skin reaching these vessels will spread exceedingly rapidly, either obtaining access into the blood stream, with consequent septicaemia, or spreading locally, involving the underlying bone or joint. Apart from these minute skin abrasions, infection may take place from lymphatics draining any area of local sepsis which may be present at the same time as the bursitis. By taking precautions against these, simple bursitis will subside with rest and fomentations or some form of counter-irritation such as blistering or painting with iodine or strapping over Scott's ointment. If the effusion is clear and painful, and it persists, aspiration with a wide-bore needle or small-sized trocar and cannula under strict antiseptic precautions may be employed.

The same treatment may be followed in dealing with chronic bursitis. For recurrent and troublesome bursitis the only satisfactory treatment is complete excision of the sac, making sure that the endothelial lining has been entirely removed. When a bursa, such as the semimembranosus bursa, communicates with a joint the neck leading to the joint should be closed by ligature. The incision should be planned so as not to leave the scar over the points of pressure. For example, in the removal of prepatellar bursa it should be made at the side of the bone.

Complications of Bursae and their Treatment

Subcutaneous injuries result in haemorrhage into the cavity of the bursa, constituting a haematoma, which may either suppurate or absorb, leaving the cavity full of adhesions from fibrinous deposits and polypoid fringes from the organization of blood clot. The skin over the bursa will be bruised and transillumination will be lost; the edges of the bursa will feel thickened, and fluctuation will only be obtained over the centre of the swelling. This part must be kept at rest and the skin be cleaned and sterilized. Threatened suppuration, as evidenced by throbbing pain, heat, and pitting on pressure from oedema, must be treated by prompt incision and drainage, and the wound left to heal by granulation tissue. In haematoma of the prepatellar or olecranon bursa it is advisable to make sure that there is no underlying fracture of the bone.

Wounds may be caused by splitting of the tissues over the bursa through a direct fall on the underlying bone, or by penetrating injuries from without. The result is the escape of bursal fluid, which may prevent adequate healing. This will necessitate removing the bursa entirely, or opening up the cavity freely, scraping out the lining tissue, and allowing it to heal by second intention.

Acute suppurative bursitis may originate in the above way, especially if the skin is allowed to heal over a small wound. More commonly this condition arises as the result of subcutaneous injury to a chronically inflamed bursa which becomes filled with blood clot. Pus forms and may track to the surface, or sepsis may become diffused into the tissues around it. There is swelling and induration round the bursa, and in these circumstances the original site of infection may be overlooked. It is important not to mistake this condition for an acute arthritis of a neighbouring joint, and to make an incision and provide drainage from the bursa as soon as possible. Neglect to do this may lead to infection into the joint or underlying bone, which may become carious and necrose.

Tuberculous bursitis occurs in two forms. There is either a fluid bursitis—characterized by the formation of melon-seed bodies, which can often be felt as a soft crepitus in the swelling—or the dry type, in which the lining membrane becomes transformed into a mass of tuberculous granulation tissue that may lead to the formation of a cold abscess. In those bursae which communicate with joints the infection will be common to both cavities. Secondary infection should be guarded against. Tuberculous disease most commonly attacks the subdeltoid, subgluteal, Achilles, and semimembranosus bursae. Treatment should follow the rules laid down for tuberculosis in general, with rest to the affected part in particular. Scott's strapping may be applied to the part, and any form of passive hyperaemia if it is practicable. Softening when it occurs is dealt with by aspiration, but if distension becomes excessive, incision, washing out the melon-seed bodies, bipping, and closing the cavity may be used; it is undesirable, however, that any extensive operative treatment should be performed. In burrowing bursae which become secondarily infected, such as the subgluteal, it may be necessary to open the area and scrape out the granulation tissue, pack with bipp, and allow it to heal from the bottom.

In *syphilis* a symmetrical bursitis with effusion may appear during the secondary stage, or, later, a gummatous infiltration of the bursa. The walls of the bursa become thick, presenting as a hard fibrous tumour with a small cavity in the centre. This variety occurs in the prepatellar or ischial bursa. In the secondary stage antisyphilitic remedies will clear up the condition, and may help in the gummatous condition, but the gummy material tends to break down with involvement of the skin, giving rise to sinuses. Under these conditions removal of the whole mass is necessary for cure.

Gouty deposits sometimes occur and often involve the olecranon bursa. They consist of chalky masses of biurate of soda, which can be seen under the skin. As a rule gouty bursitis calls for no local treatment, but the overlying skin tends to break down and the mass should be excised before infection takes place.

In *gonorrhoea* a sudden bursitis may occur as a septicaemic manifestation of that disease. It is uncommon, and treatment should be directed towards the cause of the condition.

OPHTHALMIC MALINGERING

BY

SYDNEY TIBBLES, L.R.C.P., L.R.C.S.Ed.

Formerly Honorary Eye Surgeon to the War Office, Central Recruiting Authorities, Ministry of Pensions, etc.

Claims for injuries to sight after motor accidents and injuries at work are frequent, and are generally referred to an eye surgeon for examination and report.

Having first heard the history and seen all relevant documents, make a note of any visible defects or injuries, judging their possible effects on the sight. A small nebula at the edge of the cornea can have little or no effect on the vision, whatever the claimant may say. Should he obviously be malingering, do not let him know he is suspected, as that only raises opposition on his side, while it is so easy to find out whether he can or cannot see. Examine the front parts of the eye through a loupe, using a good light and noting the pupillary reactions. Generally speaking, the older the patient the smaller the pupils; while short-sighted people have larger pupils than normal. It is the reverse with the long-sighted; the latter have more focusing to do. Excluding tabes, in which there is no direct reaction to light, if a light from a small torch is shone on a healthy eye the pupil contracts with that of the other eye. Should the eye be blind or partly so, there is no reaction in the former and very little in the latter case. Adhesions, too, may affect contraction of the pupil. Take the distant and near vision of each eye, then by means of retinoscopy the effect of any error of refraction can be settled.

Methods of Testing

Should the patient claim loss of sight in one eye, ask him to read small print, held a foot away, then hold a ruler a few inches from his eyes, between them and the print. If he reads without hesitation, he is doing so with both eyes. Next take a strong prism, say 16 degrees, holding it base up or down in front of his bad eye. Ask him to pick up a pin, a penny, or a pen and to write with the last. If he sees with both eyes, objects appear about three inches apart, and he has the utmost difficulty in doing these things, while his attempts to do so give him away at once. Care must be taken that both eyes are kept open.

In the Friend test letters alternately red and green are looked at through a red and a green lens. The red glass lets only red rays through and the green only green rays, so if he reads all the letters he sees with both eyes. If the refraction and other things appear normal but he only admits seeing the top letter at twenty feet, he should see the second row at half the distance, and other rows in proportion. Place a plus 3 lens in front of the good eye and a weak minus, say −0.25, which will make no appreciable difference to the sight, in front of the bad eye. If he reads the letters at the end of the room he is doing so

with the bad eye, as the plus 3 will prevent a normal eye seeing more than the top letter. Any number of variations can be worked with lenses.

It is possible by retinoscopy to tell pretty well what a patient should see. Roughly one dioptre of short sight cuts vision down to a half, two dioptres to a quarter, and other amounts in proportion. By holding a plus 1, 2, or 3 in front of one's eye, if the refraction is normal, short sight to these degrees is produced, so that one can tell what these myopes see. Near at hand they see reading type up to their far point, which depends on the degree of short sight; minus 10 being able to read near type at four inches, minus 2 at twenty inches, and so on in proportion. If he is presbyopic one must calculate accordingly. Should we find minus 3 of short sight, a minus 3 lens should let this eye improve from a tenth to full vision. This is fairly easy with myopes, but as long-sighted people focus to overcome what they can of their defect, an amount which varies with their age and vitality, it is not quite so easy to tell what lens they require, as that needs the co-operation of the patient. At 20, if there is plus 3 of long sight, the eye may get normal distant vision, which as the accommodation fails may drop to a half at 40 and a tenth at 60 years of age, although an appropriate lens will give him normal sight again.

Some Personal Experiences

Examining hundreds of thousands of eyes at the Central Recruiting Office at Whitehall, I found that the bulk of the refractive errors were cases of long sight or long-sighted astigmatism, then came similar short-sighted conditions, and lastly cases of mixed astigmatism. In those days there were many malingerers, whereas nowadays the men are quite hurt if they are a little short-sighted and think they may be rejected. Many men had glasses that could be improved upon; others had certificates saying that they had all sorts of eye conditions. There were many cases of artificial conjunctivitis, tobacco ash, soap, and other irritants being used. When at Devonport I saw two men who had used somebody else's atropine ointment, which had a bad effect on their sight for a few days. Many aliens swore they had trachoma and produced certificates to that effect. Some had nothing more than a slight stippling of the conjunctiva, like blotting-paper seen through a strong lens. There were plenty of genuine cases in every stage which we rejected because of the contagiousness of trachoma.

On my return from the front a man consulted me, saying his doctor told him he had trachoma. On everting his lids it was evident they had been burned with probably lunar caustic stick. The authorities were informed at once, and he turned up a week later, at a board, escorted by the police as an absentee. He gave a different name and address, denied having seen me before, and as the lid condition was getting better he was marked as fit so far as the eyes were concerned, although he had a certificate from an eminent senior saying he had trachoma.

Night-blindness used to be a good excuse for missing duty. Lack of vitamins is a supposed factor, though it is a symptom of retinitis pigmentosa, which, with its gradually diminishing visual field, has fundus changes so characteristic that once seen they are never forgotten. Hysterical disturbances occur both in the forces and among civilians. The visual fields vary greatly; there is nothing abnormal to see in the eye, in this latter respect resembling toxic amblyopias, which are generally due to tobacco and alcohol. The latter, however, have a definite scotoma for red in the centre of the field, while the history of the case helps.

One young girl recently seen had a partly blind eye, because her father, having to return to South America, had put her in a convent, which she resented. As there was no doubt about the diagnosis, he was told she would get better if he went, and in a little over a week she saw properly again. Another girl quarrelled with her mother and would not see. She soon got better. In both cases only one eye was affected, and the visual fields varied greatly from day to day.

In 1915 somebody wrote to the Press in reply to a letter of mine, when in the Army, in which I deplored the fact that men were being "boarded" out of the Army when all they wanted was a pair of glasses. He suggested that ordering glasses for soldiers would produce a nation of troglodytes. Recently I saw four American sailors, two of whom were wearing glasses; this, of course, applies to men of every nation nowadays. Happier cases where the men could have escaped duty to their country come to mind. Just before the last war one saw me about his eyes, with glaucoma of both. They were operated on; he was at the front throughout the war, winning a D.S.O. and bar. Another highly short-sighted patient served throughout at the front without bad effect upon his eyes, and the same is true of many more seen at Pension Boards for other reasons.

LUNACY AND MENTAL DEFICIENCY

THE BOARD OF CONTROL'S REPORT

The annual report of the Board of Control[1]—the twenty-fifth—carries the story of mental hospitals and institutions for mental deficiency down only to the end of 1938. Since then many things have happened. The war emergency scheme provided for the total evacuation of four mental hospitals and the partial evacuation of one mental deficiency colony, while the remaining mental hospitals (with a few exceptions) and twenty selected mental deficiency institutions were to allocate for civilian casualties about one-quarter of their normal accommodation. The scheme which the Board of Control has had in hand, including the provision of certain additional beds at hutments to be erected in the grounds of a number of institutions, is designed to furnish 41,000 casualty beds for emergency use. The consequence has been the re-allocation and some, though not undue, crowding of the customary inmates. It is not inappropriate, perhaps, that war, the supreme lunacy, should have turned the mental hospitals inside out.

But the period covered by the present report was one of undisturbed progress. Overcrowding was somewhat reduced, the death rate in mental institutions fell, the increase in direct admissions was more than counterbalanced by the increase in absolute discharges and departures, and voluntary admissions as contrasted with admissions under certificate were on the upgrade. At the same time an aggregate deficiency in bed space of nearly 3,000 had to be acknowledged, and even at the beginning of the present year the war was casting its shadows before it and armament work was delaying new hospital construction. The building of proposed new hospitals for Essex and for Lancashire was not able to be started, a site provisionally selected for a mental hospital in Kent had to be abandoned, and although sites have been acquired for new hospitals in Surrey and in the West Riding, the buildings are not likely to be completed for a considerable time to come. There is therefore no prospect of any substantial increase in bed accommodation in the near future and overcrowding is likely to increase.

Out-patient Centres and Part-time Psychotherapists

An encouraging feature of the report is the steady increase in the number of out-patient centres. Such centres conducted by or in conjunction with staffs of mental hospitals now number 177, the number of patients presenting themselves for treatment last year exceeded 19,000, and the number of attendances 74,000. In addition, an unspecified number of out-patient centres are conducted independently of mental hospitals—at least twenty-five in connexion with other hos-

[1] *Twenty-fifth Annual Report of the Board of Control for the Year 1938.* Part I. H.M. Stationery Office. (1s. 6d. net.)

pitals in the London area, and thirty-two in different parts of the country. Only three public mental hospitals in England have no such centres associated with them.

Concerning part-time psychotherapists, about which a good deal has been said, the Board notes with satisfaction that a medical psychotherapist engaged on a sessional basis has been added by the London County Council to the staff of one of its hospitals to deal with those patients who appear likely to benefit by psychotherapeutic treatment. Some doubt is expressed over the terms of the recommendation by the Mental Hospitals Committee to the Council, in which it was stated that it was preferable for psychological reasons that this form of treatment should be given by a practitioner who was not open, as a member of the whole-time staff might be, to the suggestion that he was responsible in some way for the patient's continued detention. The Board points out that this in any case could not apply to the voluntary patients, and it cannot agree that it correctly represents the attitude of the average patient to the whole-time medical staff. There may be patients to whom visiting doctors are more acceptable, but the argument must not be pressed too far, because if it were carried to its logical conclusion it would limit the whole-time staff to the care of the patient's physical condition, which would be absurd.

Voluntary Patients

The increasing proportion of voluntary patients is generally satisfactory, but there is still far too wide a margin between the more and the less progressive hospitals in this respect. The tendency to restrict voluntary admissions is not entirely to be explained by the fact of overcrowding, in which conditions those under certificate would have preference. In a previous report the Board estimated that when the Mental Treatment Act was in full operation admissions under certificate would not exceed one-third of the total. This forecast has already been realized in a few areas. The percentage of voluntary admissions last year at Swansea was 73, at Cardiff 72, at Croydon 71, and at Portsmouth 70. But at the other end of the scale there are seven hospitals where the proportion of voluntary admissions is under 15 per cent., and twenty-seven others where it is between 15 and 25 per cent.

Some medical men take the view that if a patient has to enter a mental hospital the fact of entry cannot be concealed and it is relatively unimportant to what legal category he belongs. It is true that the legal classification bears no relation to the medical. A voluntary patient is not necessarily a mild case, nor is a certified case necessarily more serious or likely to require a longer period of treatment. But it must not be assumed, says the Board, that the legal classification is unimportant. If the patient recovers it makes an enormous difference to his peace of mind that he can console himself with the thought that he has never been certified, and even if there is no recovery the avoidance of certification saves the relatives from distress. At the same time the subterfuges sometimes adopted with the kindest intention to treat on a voluntary basis patients who have no volition are deprecated.

Statistics of Mental Hospitals

The main body of the report as usual consists of statistics, most of which are routine, but some throw an interesting light on the subject. Of the 158,723 persons suffering from mental disorder and notified as under care in England and Wales at the beginning of the present year, 142,897 were rate-aided, 14,972 were private, and 854 were criminal (the number of patients in the Criminal Lunatic Asylum, Broadmoor, was 779—599 men and 180 women—but there were also 77 criminal patients in local authorities' institutions). Of the total number of mentally disordered patients, 133,827 were in institutions provided by local authorities, only 275 were in private single care, and 3,560 were on outdoor relief, the remainder being in registered hospitals, licensed houses, approved nursing homes, and public assistance institutions. Voluntary patients numbered 10,297, and temporary patients 630.

The death rate in mental hospitals was 6.57 per cent. of the average daily number resident, as compared with an average of 6.94 for the preceding quinquennium. Pneumonia and diseases of the myocardium were the principal causes of death. Violent deaths, including suicide, accounted for just under 1 per cent. The cases of infectious disease among patients numbered only 128, with five deaths. The tuberculosis prevalence was equivalent to 8.3 cases per thousand patients. Typhoid and paratyphoid fever accounted for 38 cases in twenty-two hospitals. The number of cases of dysentery (565) was higher than at any time during the last ten years. It is clearly established that the recent rise in incidence is due to a large increase in infection by the Sonne organism. It is known that during the last few years Sonne dysentery has become increasingly prevalent in the general community.

Treatment by Insulin and Cardiazol

A summary is given of the results obtained from a questionary circulated to the various hospitals on the results of treatment by insulin and cardiazol. The returns relate to 3,531 completed cases, almost equally divided between males and females. The treatment has been employed at ninety-two institutions as follows: insulin only, 3; cardiazol only, 61; insulin and cardiazol combined, 16; insulin and cardiazol not given together but at different times, 12. The results in those cases in which three or more months had elapsed since treatment ended can be best furnished in a table extracted from the fuller tables published in the report. By the term "complete remission" is meant that the patient was apparently well; by "incomplete remission," that he was fit for work but with one symptom left; and by "partial remission," that he was still fit for work but with several symptoms left.

	Cases which have left Hospital			Cases which have not left Hospital		
	Complete Remission	Incomplete Remission	Partial Remission	Ameliorated	Unchanged	Worse
Insulin ..	138	36	34	50	114	9
Cardiazol ..	542	134	152	594	1,220	110
Both ..	27	16	12	30	88	3

In 363 other cases treated details were not furnished or the cases did not fall under precise headings. Nineteen deaths occurred—namely, six patients who were under insulin treatment, ten under cardiazol, and three under both, a proportion of deaths to completed cases of 0.5 per cent. It is obvious that the matter does not lend itself to exact statistical statement, but there was some remission in about 31 per cent. of cases leaving hospital subsequently to treatment, and amelioration in just over 19 per cent. of those who were treated but did not improve enough to leave hospital. The clinical opinion with regard to triazol, which had only been tried in fewer than a hundred cases, was that it gave results broadly analogous to those obtained with cardiazol.

Mental Deficiency

Good progress was made last year in institutional accommodation for mental deficiency, and practically all the larger authorities in England now have a number of beds which at least meets their most pressing needs; similar progress in Wales cannot be reported. Occupation centres continue to increase in number, though not so rapidly as had been hoped. The warning is repeated that such centres should be regarded primarily as intended for tractable and ineducable lower-grade defectives living in good surroundings. Circumstances may sometimes compel the admission of higher-grade feeble-minded patients, but the result in mixture of grades adds greatly to the difficulties of organization and teaching. The question of training supervisors for occupation centres has not received the attention it deserves. The salaries offered by certain authorities, says the Board, "would hardly attract a charwoman." The occupation centre has proved its value and emerged from an experimental stage, and the Board feels that the time has come to establish some recognized training scheme for those who will be in charge of such centres.

The number of mentally defective persons in institutions and under statutory care in the community at the beginning of the present year was 89,904. Whereas there are fewer males than females subject to mental disorder (44.2 as compared with 55.8 per cent.), in mental deficiency the sex ratio is reversed, males accounting for 51.2 per cent. of the cases and females for 48.8 per cent. About 46,000 defectives were in institutions and homes provided under the Mental Deficiency Act and 39,000 were under statutory supervision. In only a few areas does the number of defectives who are in institutions or in ante-natal care closely approximate to the number ascertained as subject to be dealt with. In some areas large numbers of the ascertained persons still remain in receipt of poor relief, and in others, although there has been a large ascertainment, action has not been taken in many cases. In one Welsh county, for example, the proportion ascertained is 1.46 per thousand of the population, and the proportion dealt with only 0.23. On the other hand, in the county of London the proportion ascertained as subject to be dealt with is 2.83 per thousand, and the number in institutions or in other care is 2.80.

At twenty certified institutions provided by local authorities or combinations of authorities and at five certified institutions provided by other bodies resident medical superintendents had been appointed. There is a decrease in the number of persons on licence from institutions (3,107), due to the anti-social behaviour of certain defectives on licence, to which prominence was given in legal proceedings. The scrutiny which local authorities have consequently made has led to the recall to institutions of a number of defectives and to a revision of policy and methods which it is hoped will eventually help rather than hinder the development of licence on safe and progressive lines.

TRANSPORT OF MILITARY SICK AND WOUNDED

BRITISH AMBULANCE TRAINS AND BOATS

The Channel port which serves as the headquarters in England for the reception and distribution of military sick and wounded from the Expeditionary Force was visited a few days ago by representatives of the Press, who were afforded an opportunity of inspecting an ambulance train and boat. The railway companies have set aside a number of their trains for this purpose, and their staffs, working to Army specifications, have fitted them up as travelling hospitals. The equipment and supplies have been provided by the Army Medical Service.

The trains are painted dark green, with the Red Cross prominently displayed on the sides of each coach and on the white roofs. Each train consists of nine coaches, five of which have been transformed into wards. The first coach is reserved for the two medical officers and the two nursing sisters who are attached to each train. Four compartments have been made into bedrooms and two into messrooms. The second coach is for the twenty N.C.O.s and men who serve as nursing orderlies, stretcher-bearers, and kitchen staff. Bunks have been arranged in two tiers along one side of the coach, and on the other side tables for meals. The men are also allowed to use, for recreative purposes, the compartments reserved for officer sitting cases when these are not otherwise in use.

The third coach accommodates kitchen and stores. The kitchen is equipped with cooking range, a large sink with drying racks, and plentiful cupboards. In the fourth coach is an orderly room and a well-fitted dispensary with all the drugs and appliances likely to be needed in transit. The nursing sisters also have in their charge a store of medical comforts. In this same coach is the provision for officers who are sitting cases; they are given comfortable cushioned seats, and the tables have books, magazines, and ashtrays.

Four of the ward coaches are for men and one for officers. The officers' coach may be partitioned and a space reserved for sick nursing sisters if necessary. The beds in all the coaches have wire mattresses, and the metal sides are coated with aluminium paint. The thirty-six beds to each coach are arranged in tiers of three, and comfortably supplied with sheets, blankets, and pillows. They can be quickly converted to accommodate sitting cases, the middle tier being lowered on to the bottom tier so as to make quite a luxurious seat, while the upper tier still takes recumbent patients. At the end of each ward are cupboards, sinks, and lavatory accommodation, and in the middle of each coach is a drinking-water tank.

Stretchers are not carried into the wards. The patient is brought on the stretcher to the middle doors, and is then lifted out and carried to the bed by trained orderlies. Some of the orderlies belong to the St. John Ambulance Association and hold first-aid and home nursing certificates, and others are hospital orderlies who are carrying on their training during the waiting period. Two small padded compartments on each train are fitted for acute mental cases, but it is hoped there will be few or none of these. The trains are lit by electricity. Loading and unloading in the dark is carried out by the light of oil lamps. When the train is standing the staff compartments are heated by a coke boiler; when travelling, of course, the heat to the whole train is supplied from the engine.

Hospital Carrier Boats

In the harbour a hospital carrier was open for inspection. The hospital carriers are boats which have been used in peace time for the Channel and Irish Sea crossings. Each boat can take from 250 to 300 cases, or enough to fill two trains. The boats are white painted, with the Red Cross on the sides and funnel. Here again, as on the train, the ordinary furnishings and fixtures have been removed so that only a shell remains, and the state and other rooms have been converted into wards, giving the impression of a large open space with swinging cots. Each ward is self-contained under the charge of a hospital sister, who has R.A.M.C. orderlies to help her. Adequate provision of dressings and oxygen equipment is made in each ward. The first-class dining room has been turned into a ward for officers, but here, as also on the train, there is no distinction between the comfort afforded to officers and to men. The more serious cases are accommodated on the saloon deck, while the lower part of the boat has wards fitted for walking cases, so that the necessity for carrying stretchers up and down narrow stairways is avoided. The bar in the third-class saloon has been made into a dressing room where walking cases may have their wounds dressed and minor operations may be performed. Near each bed is a lifebelt, and all the sisters and orderlies are trained in A.R.P. and in the necessary duty in the event of fire, collision, sinking, or other disaster which may befall a ship. The hospital staff live on the boat, which has a galley for the service of meals, and on the boat, as on the train, patients are given a meal immediately on arrival on board.

At the Port

When the authorities at the port are notified that a boat is on its way across, the trains that are assigned for duty are got ready and the staff stand by. The patients on disembarking are taken into sheds, where the stretchers are placed on trestles and medical officers make a first examination, roughly dividing medical from surgical cases in order to facilitate work at the hospitals to which the cases will be distributed. Each man has an envelope containing a card with details of name, regiment, rank, nature of disability, and place of departure, and the record is completed with the destination. Patients who are very ill are not put on the train at all, but are sent to a local hospital where beds are reserved. During the port examination a benevolent lady, Miss Baxter, and her helpers have special permission and facilities for going among the men to distribute cups of tea, biscuits, and cigarettes.

Part of the warehouse accommodation at the port is in the hands of the Army authorities. This includes one large shed ordinarily occupied with merchandise and now stocked with linen of every description, drugs, and all kinds of supplies from which the boats and trains are provisioned. The average time taken from arrival of the boat to entrainment is an hour

and a half. Three officers of the Army Medical Service, together with one Navy and one Air Force medical officer, receive the casualties at the port, apart from the two medical officers attached to each train. The majority of the officers engaged in this work have come from civil practice; some had retired from the Army Medical Service and have rejoined.

Up to the present the transport has been limited to sickness and accident cases; there have been no war wounded. We were informed that there had been no cases of pneumonia or of serious respiratory complaints. Most of the sickness cases are digestive disorders, and the accident cases are no more than would ordinarily occur in any large assemblage of men. The work done by all concerned in this enterprise—the railway and shipping authorities and the medical services—cannot be too highly praised. Every detail has had consideration, and every emergency seems to have been forestalled.

THE MAUDSLEY HOSPITAL AND ITS SUPERINTENDENT

[FROM A CORRESPONDENT]

The retirement on grounds of health of Professor Edward Mapother from the post of superintendent of the Maudsley Hospital recalls the offer made in 1907 by the late Dr. Henry Maudsley to give the whole of his hard-earned fortune in order to found a hospital that would meet certain special needs which his long and wide experience had taught him existed in the field of psychological medicine. The subject was, as it still is, complex, and hence how best to formulate a scheme to meet these needs was not easy. What exactly, when reduced to terms, were these special needs; what precisely were the facilities needed for treatment and research; where and under whose aegis should they be provided? Great clinical exponent though the would-be donor was, his thoughts upon the matter were confessedly inchoate; and in his retirement from active practice he welcomed talks with his friends upon the matter. In particular, he was glad to turn to Professor (later Sir Frederick) Mott, whose name, without in the least belittling the greatness of the donor's gesture, always will be linked with that of Maudsley.

Conditions of Maudsley's Gift

In the statement communicated to the London County Council on behalf of Dr. Maudsley by Sir Frederick Mott, among the suggested conditions of the gift were the following: that the hospital should be for early and acute cases only, that it should have an out-patient department, that it should be in a central position, that three-quarters of the beds should be for patients unable to pay full cost of maintenance, and that due provision should be made for clinical and pathological research. Expression, too, was given to the hope that the hospital, laboratory, and teaching side of the institute should be recognized as a School of the University of London for the study of mental disorders and neuropathology.

There followed the acceptance of the gift by the London County Council, and if the trust which it imposed was more moral than legal, the greater and more honourable is the degree to which it has been fulfilled and the more onerous has been the task which fell on those charged with evolving the development of the scheme, especially the superintendent.

"The Maudsley," 1914-23

Immediately upon the completion of the building came the war of 1914-18 and the temporary use of the hospital first as part of the 4th London Territorial General Hospital and then by the Ministry of Pensions. To the donor this interim use was a period of deep disappointment, accentuated doubtless by his advanced age. He found it hard to believe the assurances of his friends that the work which the hospital (to which his name already had been given) was performing on behalf of shell-shocked soldiers and later for pensioners was, besides its intrinsic worth and the lessons it was teaching, of signal value in helping to pave the way for changes in the law so as to enable persons suffering from nervous and mental illness to secure treatment in the earliest stages.

At last came in 1923 the use of the hospital—aided by the Central Laboratory which, moved from Claybury, had been erected jointly with it—by its owners, the London County Council, and on lines in the main as outlined by its donor. Some four years before his death he had agreed to certain changes in the conditions of his gift: changes the need for which had been felt all the more clearly in the course of the hospital's use by soldier patients; notably the need to legalize the reception of patients on a voluntary footing, for which purpose legislation had been secured by the Council in its General Powers Act of 1915.

Captain Mapother, as he then was, had been serving in France and Mesopotamia; and, besides having been officer-in-charge of the neurological section in the 2nd Western General Hospital, had been acting as superintendent during its occupancy of the Maudsley by the Ministry of Pensions, and was an active member of the team of postgraduate lecturers for the course established there in 1920 for the Diploma in Psychological Medicine. In the mental hospitals service he had reached the position of deputy superintendent at Long-Grove, the medical staff of which he had joined fourteen years previously during the period of that hospital's opening and development. With this wide background of experience his appointment by the London County Council as superintendent of the Maudsley Hospital seemed a certainty. It was shortly afterwards, consequent upon Sir Frederick Mott's retirement, that Dr. (now Professor) Golla was appointed director of laboratory and pathologist to the London County Mental Hospitals.

The Past Sixteen Years

Since that date and for the past sixteen years Dr. Mapother has provided in himself an example of enthusiastic devotion to a chargeship and to an ideal, coupled with a prodigious output of energy. This ideal has been the elimination from the patient's feelings of any notion of constraint or coercion about the treatment or that it is being applied compulsorily, and especially of any feeling of active detention. There are, and always will be, cases in which certification and detention are unavoidable; and those whose experience is greatest know, too, that there even are cases in which such procedure is of itself so beneficial as to rank it as part of treatment. Apart from the latter cases—and they are but few—the reality of the ideal is unquestionable; and, in dealing with mental disorder, it is now a truism that when treatment is carried out either with free consent or upon the patient's own voluntary application, and in an atmosphere of co-operation, in a large proportion of cases the chances of recovery are altogether better, and the chances also of getting patients in an early stage of their illness are likewise much greater. It is on these lines that "The Maudsley," the name by which the hospital is familiarly known, has been developed. It is in fact the only hospital in the country provided by a local authority under the Mental Treatment Act for voluntary patients alone.

Teaching has gone hand in hand with all Professor Mapother's clinical and administrative work, both at the Maudsley and as physician and lecturer in psychological medicine at King's College Hospital as well as the Maida Vale Hospital for Paralysis. His own position and that which the Maudsley Hospital occupies in the field of medicine have been recognized by the University of London in its appointment of him as the first occupant of the chair of psychiatry. Now, owing to the outbreak of war, he has to witness the dispersal of the fruits of his efforts at the moment of their culmination. Some of the essentials of the work will still be in operation, however, and the component parts of the institute can be reassembled with ease upon foundations well and truly laid.

REPORT ON THE CONDITION OF POLISH REFUGEES IN RUMANIA AND HUNGARY

BY

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AND

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The following report is based on an investigation of refugee conditions carried out under the auspices of the Society of Friends and the Polish Relief Fund between October 17 and November 3. During this time some twenty-three military camps and civilian centres were inspected in Rumania and Hungary. The fullest co-operation was given by the civil and military authorities in both countries in the inspection of records and accommodation, and in permission to talk freely with Polish soldiers and civilians.

Exact figures regarding the total numbers and classification of refugees are not yet available owing to registration being incomplete, the uncontrolled movement of civilians, and the entrance of stragglers over the Russian frontier, which still continues. There appear, however, to be 30,000 to 35,000 in Rumania, of which 10,000 are civilians; 48,000 to 50,000 in Hungary, of which again some 10,000 are civilians. Women and young children form less than a fifth of the civilians, and there are very few young children without at least one parent. There are, however, some six hundred or more Polish boy scouts and other boys of from 12 to 18 who came over with the army; many of these have in Hungary been interned with the soldiers. There are also several hundred students in both countries. About half the male civilians are "functionaries"—postmen, police, civil servants, etc.—who were evacuated by the Polish Government. Only a small number of peasants appear to have crossed the frontier.

In both Rumania and Hungary we were continually impressed by the obvious desire of the authorities to do their best for the refugees, but it was equally clear that circumstances made the immediate provision of adequate accommodation and equipment completely impossible. Thus Rumania, with nearly a million men mobilized and a new class to be called this month, was short of bedding, clothing, and barracks even for her own army, while Hungary was still in the process of absorbing some thousands of her own refugees from Transylvania, and was finding the sudden influx of 50,000 Poles an almost intolerable strain on public funds. Food was in both countries available in adequate amount, but there was no question that all amenities, and in fact many necessities such as clothing and bedding, would have to be provided by outside agencies.

Refugees in Rumania

Almost all the refugees at present in Rumania, together with many other civilians with private means who have since left the country, crossed the northern frontier within forty-eight hours in the third week in September. Although the authorities were expecting a large influx, and had sent twenty-five army trains fitted with bathing and disinfecting facilities to the frontier, the numbers were so overwhelming that all attempts at orderly delousing, registration, and distribution completely broke down. The civilians found their way, largely haphazard, to Bucarest or villages throughout the country, where they were taken in by the peasants, who showed them the utmost generosity. The soldiers were disarmed and interned, according to international law, large numbers being sent to Tulcea and Babadag in the Dobrudja. This had the advantage of concentrating them in a militarily "empty" zone well away from the northern frontier, but as the Dobrudja is a marshy and highly malarious region it has resulted in a considerable amount of infection.

The Government is now allowing 100 lei a day for each civilian adult (50 lei for a child), which with the low cost of living is adequate to provide for food and lodging. In order to draw it, however, the civilians must register and remain in one of thirty-six provincial centres outside Bucarest and away from the northern frontier. Those we visited appeared to be reasonably well provided with board and lodging, but hardly any had more than the summer clothes they came away in. There is a hope that 3,000 or 4,000 of the technicians may be found work in Turkey or elsewhere, but there is little prospect of employment for the clerks and civil servants. The future of 1,200 Jewish civilians is particularly precarious, owing to recent anti-semitic legislation. Only 200 can at present obtain permits for Palestine.

The soldiers are interned with their officers in twenty-one camps in Wallachia, accommodated in old army barracks in much the same conditions, except as regards liberty and occupation, as the Rumanian soldiers. Most of the larger camps we visited were fitted with sufficient showers to give the men one bath a week, though the water supply was not always adequate and it was not clear how fully the men availed themselves of the facilities. At Targu Jiu, Polish soldiers were at work on the construction of new barracks to house 12,000 of them, the intention being to concentrate the remainder in a second new camp at Targovisti. The existing barracks were for the most part cold, ill-lighted, and overcrowded, with inadequate sanitation and a sea of mud stretching between the buildings.

Clothing and Bedding.—In every camp there was a desperate shortage of clothing, shoes, blankets, and palliasses. Relatively few of the men had overcoats, and hardly any a change of underclothes. Many had only linen summer uniforms, although the weather was already becoming bitterly cold and wet. Time after time men stripped off their uniforms to show us the filthy, ragged, and verminous shirts they had worn night and day for six weeks. Shoes were wearing out, and in only one camp we saw tools and leather for repairing them. In some cases the men had separate beds, but in many they were sleeping on loose straw. Almost universally they complained of lice, for even with regular bathing it was impossible to keep free without changing and disinfecting clothing.

Health.—The civilians and the majority of the soldiers looked well fed and in good physical condition. An increasing number of respiratory infections, however, are occurring with the onset of the cold weather, and though medical attention is available there are practically no facilities for nursing, special care, or isolation within the camps themselves. (A Polish medical orderly told us there was no thermometer between two battalions.) The more serious cases (there have been few of these) are removed to hospital.

Malaria.—This is so common in many parts of Rumania, and so many of the Rumanians have had the aestivo-autumnal type, that it is not there regarded as a serious disease. The Poles, being infected in nearly all cases for the first time, however, were suffering considerably, particularly as adequate amounts of quinine were not always available in individual camps, although there is yet no shortage of quinine preparations in the country as a whole. In one camp of a thousand men the Rumanian doctor told me he was seeing four new cases of malaria a day, confirmed by blood examination, although fortunately the season was nearly at an end.

Typhus.—This is undoubtedly the chief epidemic danger in Rumania this winter. The classical exanthematic type is endemic in Bessarabia and parts of Poland, and was responsible for an enormous mortality in Rumania during the last war. In view of the extent of the Rumanian mobilization it was regarded as a serious possibility even before the Polish soldiers were added to the number. Immunization has not been found effective against this

type in Bessarabia, and its prevention appears therefore largely to resolve itself into the prompt provision of clothing and bedding, with the consequent possibility of effective delousing. So far no case has occurred.

Typhoid and Dysentery.—Extensive typhoid inoculations are being carried out both in the Rumanian army and among the Polish refugees. There are at present sufficient quantities of vaccine in the country. No case of true dysentery has occurred so far, one outbreak of gastro-enteritis in camp in the Dobrudja having been traced to the soldiers having eaten large quantities of unwashed grapes which had been sprayed with copper sulphate.

Refugees in Hungary

As in the case of the refugees entering Rumania, the main influx into Hungary happened during the third week of September, though extending over about four days. There was, however, considerable difference in the way they were distributed. Thus in order that the Polish army should not appear to be kept as military units the great majority of the officers were separated from the men and billeted together, being allowed much greater freedom. The men were also paid two filler a day, though this had to provide for certain necessities such as soap. (In Rumania the soldiers, as opposed to the officers, had no money whatever.) The soldiers were for the most part interned in barracks, but some were in derelict factories and other disused buildings. Many of the civilians were billeted privately, but many more were in separate camps, and there were even a number of women and children in some of the military camps. Among the more unfortunate were several hundred scouts and boys of scout age who were living as, and with, soldiers under particularly brutalizing conditions. The urgency of removing civilians from the military camps was, however, fully realized by the Government, and they were being withdrawn as fast as alternative accommodation could be found. It was planned to have one large camp for the women with young children, and a separate scout camp had already been started with the aid of the Hungarian scouts which would accommodate 250 boys at Somloszöllös.

In the case of both the civilians and the military, we were particularly struck with the great difference that existed between the best and the worst refugee conditions. Thus a civilian camp at Helemba was housed in what had been a newly built Czech barrack subsequently converted into a holiday home, and was admirable as regards cleanliness and equipment, although the invariable shortage of personal clothing existed. We later saw a military camp housed in a derelict vinegar factory in which 500 men were in almost complete darkness in a warehouse below ground level, sleeping on a concrete floor covered with loose straw. In another part of the same building were a number of women and children, six families inhabiting a room twenty-four feet square.

Health.—The health of the refugees in Hungary appeared better than of those in Rumania, largely owing to the absence of malaria. Similar cases of respiratory infection were occurring. In the military hospital at Kamaron, which served camps containing over 5,000 Poles, we found only a comparatively small number of sick, all minor ailments with the exception of three cases of pneumonia and six men recovering from air raid injuries. The danger of typhus, though it cannot be altogether excluded, appears much less than in Rumania, the only cases in Hungary of recent years having been traceable to nomad gipsies coming over the Rumanian border. The same difficulties with regard to vermin infestation owing to lack of clothing apply as in Rumania, though probably more of the civilians became verminous in Rumania while staying in peasant cottages.

The Morale of the Refugees

If the lot of the civilian refugee is wretched, that of an interned army with no country to return to is still more hopeless. Almost more than the material discomfort of the cold and lice, the men felt the forlorn misery of being cut off from the outside world, among strangers, however friendly these might be. A few letters were coming through from the German occupied territory, either direct or through the International Red Cross, but none from the Russian side, and there was hardly a man without constant anxiety for family or friends. Many indeed did not even know whether their wives and children were in Germany or Russia or Rumania or Hungary, and some families were even divided between the four countries.

Although sharing many of the same anxieties as the soldiers, the civilians were on the whole less dispirited, largely on account of their greater freedom and the knowledge that they could go elsewhere if opportunity arose. There were more signs of enterprise among them, some trying to find employment locally or abroad, others to make their circumstances more homelike. Thus in Ploesti, where a thousand civilians were concentrated, the president of the civilian Polish committee had drawn up plans for starting both an elementary and a commercial school, had selected the staff and curriculum, and worked out the minimum cost for essential equipment. We felt that there would be an immediate response if workshops, etc., could be established in civilian centres.

Among the military refugees there appeared to be a strikingly different spirit in different camps, which was by no means wholly dependent on material circumstances. That in which the men were clearly most contented was one which was fortunate in having both a Rumanian and a Polish colonel of exceptional qualities, but, though there was obviously thoughtfulness for the men and a general atmosphere of cleanliness and order, the basic provisions of the camp were little different from that in which the spirit was worst. Generally speaking, the men appeared dazed and apathetic, with a general sense of grievance for the march of events and their own miserable circumstances, which was apt to be visited irrationally on either their own or their foreign officers, and tended to make them uncooperative even in improving their own conditions. They were in no mood to appreciate the real sacrifices which the Rumanians and Hungarians were making to support them, and it was sad to see signs here and there that the initial friendliness with which their care had been undertaken was beginning to give way to exasperation.

In spite of such signs, however, we were repeatedly impressed by the sympathy and understanding of the Rumanian and Hungarian commandants of the various camps. The colonel in charge of five camps at Kamaron said that he felt that many of the more troublesome men were in a state of war neurosis, and that the sudden disaster within a few weeks of their being mobilized had left them with none of the *esprit de corps* and discipline developed during a long campaign. He added that, next to blankets and underclothes, footballs, equipment for workshops, and school books were the first essentials.

Relief Organizations

A number of relief organizations are already at work in both countries, and in Hungary, where much is deputed to them by the Government, a co-ordinating committee has been set up consisting of representatives of the Hungarian Red Cross, the Polish Government, the Hungarian-Polish Society (a very active organization which has been largely responsible for the billeting of civilians), and the American Commission for Polish Relief. The last operates also in Rumania, in close association with the Y.M.C.A. and Y.W.C.A., and is planning the large-scale establishment of "foyers" in the camps of both countries, to act as local centres for relief activities. The Save the Children Fund also has active representatives in Bucarest and Budapest. Other organizations such as the OSE are concentrating on special aspects of the refugee problem (for example, the fate of Jewish refugees), and much is being done by private individuals in both countries. The activities of the organizations not receiving funds from abroad are necessarily restricted.

Conclusions

1. An urgent need exists in both countries for warm clothing of all kinds, and particularly for underclothing, overcoats, blankets, shoes, and material for mattress covers. It is unlikely that any large quantity of these will be obtainable in Rumania owing to the requirements of the Rumanian army. (Sheep-skin coats, which can be obtained very cheaply in Rumania, are unfortunately too difficult to disinfect for their use to be justified.) In Hungary at least some of these requirements can be obtained within the country at rates that would make their shipment from abroad inadvisable (for example, shoes and some proportion of the blankets, overcoats, and underclothing).

2. It is most desirable that in both countries the existing facilities for regular bathing and for the disinfection of clothing of refugees should be extended as rapidly as possible. Where straw is not always immediately available, sufficient stocks should be kept to provide for the frequent changing and burning of infected straw from sleeping quarters.

3. There appears to be no immediate shortage of either drugs or vaccines, but a shortage is likely to occur if the refugee position remains unchanged. Quinine preparations in Rumania and disinfectants and soap in both countries are those of which there is most likely to be a dearth.

4. The desirability of equipping workshops and schools and concentrating older boys and students where they can continue their education is almost as great as providing physical necessities. A few textbooks in Polish (for example, for learning Rumanian and Hungarian) could be printed locally if money were available, and would be of the greatest value.

5. In view of there being many highly trained Poles and Polish-speaking Rumanians or Hungarians in both countries, it does not seem advisable to send out any extensive personnel from this country at the present time.

We wish to express our sincerest thanks for their help to the civil and military authorities and to the Red Cross in Rumania and Hungary; to the British Legation and Polish Embassy in Bucarest, and the British and Polish Legations in Budapest; to Professor Cambiescu, Professor Ciuca, and Dr. B. Johan; to Princess Caragea and Mlle Vajkai of the Save the Children Fund; to Mr. Paul Super and Mr. James Brown of the American Commission for Polish Relief; to Countess Romer of the Polish Society in Rumania; and to Princess Odescalchi-Andracsy and Countess Erzsèbet Szápáry of the Hungarian-Polish Society.

Local News

INDIA

The Campaign against Leprosy

The sixty-third annual report of the Mission to Lepers appears with the title "The Inherent Promise" and relates to the work accomplished all over the world, and especially in India, which country has always been one of the most cultivated fields of this interdenominational and international organization. It is announced that a record number of lepers is now being helped, and special progress is noted in the report in respect of the intensive treatment of the disease in young children, where the benefit is more obvious. This extension of the programme of the organization has been especially pushed in India, where also progress has been made in the care and treatment of infected children on a larger scale and to the colonization of young people from the leper homes in which infection has been prevented; provision has been made in the Central Provinces for such children and for arrested cases in which there is now a reasonable hope of no recrudescence of the disease. The provision of the new home for lepers in Fyzabad in the United Provinces was rendered possible largely by subscriptions raised locally for that specific purpose, and a co-ordinated scheme of treatment, including colonization possibilities, is now coming into being. The Chandkuri Leper Home in the Central Provinces, which celebrated its fortieth anniversary last year, has treated some five thousand lepers, and seven hundred healthy children of leper parentage have taken their place in the healthy community. The report expresses the view that hydnocarpus oil and its esters administered intramuscularly, subcutaneously, and intradermally remain the most valuable therapeutic agents. For improving and maintaining the general health of these patients the diet must be liberal, well balanced, and rich in vitamins. Occupational therapy is highly esteemed, and it is important to eliminate intercurrent diseases. This emphasis on nutrition, which, it is remarked, has sometimes been ignored with unfortunate results, dates from the beginning of the campaign against leprosy; without an adequate diet drug therapy nearly always fails to be of much value. The report contains a reference to a case of one leper home in which the patients denied themselves meat and sugar for one month in the absence of the missionary so that the considerable amount of money thus raised might go to the famine-stricken Bhils in the Indore district. Similar forms of practical gratitude shown by leper patients are not uncommon elsewhere in India, and the popularity of the campaign is growing steadily.

Obstetrics in India

The second All-India Obstetric and Gynaecological Congress, held in Bombay last year, was attended by delegates and visitors from more than fifty different localities. The proceedings have now been published. In his address of welcome Sir Mangaldas Mehta traced the origin and growth of maternity work in Bombay. The first maternity home, containing twenty beds, was opened in 1849. To-day there are eighty-three public and charitable institutions and nursing homes with a total of 1,308 beds. Of 37,795 births registered in the city during 1937, 27,758, or 73.4 per cent., took place in maternity institutions. For the same year the maternal death rate was 4.4 per 1,000, while the infant death rate had diminished by nearly a quarter from the rate of 1920, when only 20 per cent. of women were confined in maternity institutions. In his presidential address Dr. B. D. Mukherji of Calcutta, reviewing general conditions throughout the country, deplored the ignorance and superstition of the average Indian mother and the abject poverty of the masses. In most of the Indian villages the only medical help available for the mother is that of the untrained midwife or "dhai." Dr. Mukherji also maintained that even in urban areas the position was far from satisfactory, owing to the dearth of obstetric specialists in the smaller towns. Unless employed in Government service these men were obliged to congregate in large cities, such as Calcutta, Madras, or Bombay, in order to obtain adequate opportunity for remunerative work. Dr. Mukherji advocated the establishment of rural maternity centres, affiliated to special hospitals in the district and subdivisional towns; also the provision of mobile dispensaries for obstetric and gynaecological work in rural areas. The congress devoted its attention chiefly to the questions of the toxaemias of pregnancy and carcinoma of the cervix. Among other papers read that of Dr. D. M. Satur on post-puerperal neuritis appears to be of considerable interest. Dr. Satur's patients, drawn from an impoverished community in the Andhra district, near Vizagapatam, lived on a diet consisting chiefly of polished rice. The lack of essential food factors was further accentuated by a restriction of the diet during the latter half of pregnancy and a period of three months after delivery. The neuritis, bearing some

resemblance to beriberi, though showing definite points of dissimilarity, was of a severe type in many of the cases. A prolonged course of treatment invariably resulted in complete recovery. Dr. Satur supplied the missing vitamin B_1 factor by a diet of bread-and-milk, spinach, tomatoes, and oranges, together with a handful of germinating green gram and half an ounce of yeast daily. Severe cases also received a course of ten injections of betaxin.

ENGLAND AND WALES

Tuberculosis in Lancashire

The principles of the Lancashire County Council's tuberculosis scheme bear repetition because, in spite of their admitted excellence, they have not been adopted by other authorities as widely as they deserve. The scheme caters for a population of nearly two millions, and its essential features are: (1) combination of dispensary with hospital and sanatorium work; and (2) supervision by a central tuberculosis officer who is directly responsible to a special county tuberculosis committee. The administrative county is divided into five large areas (average population 328,000) and three small areas. A consultant tuberculosis officer is in charge of each large area, and to help him there are two assistant tuberculosis officers, four to seven tuberculosis health visitors, and a clerical staff of two. In each area there is a chief dispensary, at which is co-ordinated all the work required in that particular area, and two or more branch dispensaries, and also a sanatorium hospital containing up to fifty-seven beds, to which the consultant tuberculosis officer acts as visiting medical superintendent. The three small dispensary areas, on the other hand, are each under the charge of the medical superintendent of the three larger Lancashire tuberculosis institutions. Each has one dispensary with one or more health visitors, the clerical work being done in the office of the institution. The report for 1938 of Dr. Lissant Cox, Lancashire County Council's central tuberculosis officer, maintains the usual high standard of these reports. The death rate from tuberculosis, which had remained at the same level since 1935, fell appreciably during 1938 to 0.52 per 1,000 of population. A comparative table of new cases of pulmonary tuberculosis notified in 1938 and pulmonary notifications in 1920 shows that whereas in males the percentage reduction in the age period 15 to 25 is 42.5, in females it is only 19.4. Dr. Cox's remarks concerning non-notified cases of the disease should be brought to the notice of all those responsible for tuberculosis administration. He states: "The efficiency of notification in England varies directly with the efficiency of the county council or county borough scheme dealing with tuberculosis. If there is no really comprehensive scheme, if there are poor and newly qualified, part-time, and badly paid tuberculosis officers, if there are insufficient means for expert diagnosis and too few beds for treatment, then a high proportion of non-notified fatal cases will be the rule and not the exception." Of the 1,096 contacts examined during the year thirty-one were diagnosed as tuberculous; this is equivalent to 28.8 per 1,000 contacts examined, as against a proportion of 3.98 tuberculous persons per 1,000 of the population known to the dispensary staff in the county. Dr. Leggat, medical superintendent of the High Carley Sanatorium, gives the following figures, which are perhaps the only ones in this country, comparable with those given by Alexander, on which the benefits of extensive use of collapse therapy can be judged. In the five-year period 1925–9 1,352 patients were admitted, of whom twenty-two had artificial pneumothorax, and the bacillary loss was 19.5 per cent. In the five-year period 1934–8 914 patients were admitted, of whom 243 had artificial pneumothorax, 184 phrenic interruption, seventy division of adhesions, thirty-three thoracoplasty, and five extrapleural pneumothorax; the bacillary loss was 51 per cent.

Correspondence

Treatment of War Wounds in China

SIR,—My experiences of war surgery in China do not altogether support the amazing claims made by Dr. Trueta for the "closed" method of treatment of gunshot wounds. Before the present Sino-Japanese conflict several civil wars together with the activities of bandits over a number of years had supplied us with a steady stream of gunshot wounds with fractures of the long bones, and for many of these we used Winnett Orr's treatment. Probably most of our hospitals in China used all three methods—namely, the "closed" method, the "open-window" method, and skeletal traction on Thomas splints. Since the outbreak of hostilities, over two years ago, our experience has been greatly increased by large numbers of bomb and shell wounds.

It needs to be said that our casualties were usually seen after considerable delay and sometimes even days or weeks had elapsed; the patient's condition was strained by difficulties of transport on a primitive litter over tracks that can only euphemistically be called roads; the first-aid measures which had been applied were of the worst, usually definitely harmful and invariably produced a grossly infected wound. Shrapnel from air raids and shelling often produced frightful wounds with severe mutilation of the soft tissues. Tetanus was not uncommon, but we saw very few cases of gas gangrene. Infection of the deep fascial and muscular planes was a frequent complication of the wounds, so that it was impossible entirely to eliminate the danger of burrowing channels of suppuration by the most radical excision.

We therefore formed the conclusion that compound fractures from gunshot wounds (or shrapnel) were best treated by skeletal traction and Thomas splints. Adequate control of the fragments can be ensured, facilities for the most satisfactory drainage can be provided, the comfort of the patient, without excessive smell, is assured—and these contribute to the surgeon's peace of mind. This particularly applies to fractures of the femur, with possibly infected wounds, which formed a large proportion of our cases. Further, we abandoned Carrel-Dakin irrigation in all save the foulest wounds and considered most satisfactory the use of vaseline gauze packs, changed every ten days or so. The dry gauze pack suggested by Dr. Trueta dams back pus, is painful for the patient when the dressing is changed, and tears away newly forming granulations. Loosely packed vaseline gauze has none of these disadvantages.

Careful selection of cases for the various forms of treatment seems to be necessary. I would suggest that:

(*a*) When casualties are received early (up to six hours) and adequate débridement with reasonable hope of eliminating infection can be effected, the "closed" method is probably the treatment of choice, particularly for comfort during transport.

(*b*) For casualties received later (six to twenty-four hours) in which the damage to soft tissues is only moderately severe, after excision these can best be treated by the "open-window" method. The window of plaster can be reinserted, well padded, after each change of dressing, and if tightly bandaged one does not get overgrowth of granulation tissue.

(*c*) For grossly mutilated wounds or delayed casualties, in which certain elimination of all infective channels is doubtful, the open method, skeletal traction, and Thomas splints should be relied on.

To give a true balance it is necessary to add that no group of our cases treated by these different methods produced results comparable with those obtained by Dr. Trueta.—I am, etc.,

W. S. FLOWERS, M.B., Ch.B.,
Superintendent, Foster Hospital, Chouts'un,
Shantung, N. China.

Knaresborough, Yorks, Nov. 7.

Treatment of Gas Gangrene

SIR,—I was glad to see the letter by Mr. W. A. Cochrane in your issue of November 11 (p. 973) drawing attention to the fact that gas gangrene is often diagnosed too late. During 1914–18 I was radiologist in the Scottish Women's Hospital, Royaumont, France, where we soon learned the necessity for prompt diagnosis of the presence of gas. As we were only twenty-five miles behind the line many of the wounded reached us within a few hours of being wounded, having been taken off the train (half-way to Paris, at Creil) and brought to us twelve kilometres by ambulance. No matter at what hour of the day or night they arrived, the wounds were at once examined and the men sent to the *x*-ray room. Plates were taken and rapidly developed. When gas was found I sent an urgent note to our *médecin-chef*, Miss Frances Ivens. The patients with gas took precedence and were promptly operated on. *X*-ray plates showed distinct types of gas infiltration—(1) a mist, and full of "bubbles"; (2) streaks as of gas penetrating between the muscle fibres. This second type was the most dangerous and necessitated swift intervention. A few hours' delay made the prognosis much more serious. Dr. Weinberg was at that date working on the preparation of the serum which has since received wide recognition.

In the *Archives of Radiology and Electrotherapy* of December, 1916, I published several illustrations of these two types. The plates were also shown at the meeting of the Royal Society of Medicine Electrotherapeutic Section and published in the *Proceedings* of October, 1916. Other plates were published in Miss Ivens's address to the Surgical Section, December, 1916.—I am, etc.,

London, W.1, Nov. 11. AGNES SAVILL.

Treatment of Venereal Disease in the Field

SIR,—Lieutenant-Colonel E. T. Burke's letter in the *Journal* of November 4 (p. 928) is well timed and raises issues of the greatest importance. The wastage of man-power due to venereal disease in the 1914–18 war was emphasized in striking fashion by Sir Archdall Reid when he wrote (recommending methods of prevention), "At that time [spring, 1918] there were, but need not have been, in the venereal hospitals or in depots as convalescents British, French, and American soldiers, mature and trained men, otherwise fit for active service, sufficient not for an army corps only, but for a great army" (*Prevention of Venereal Disease*, 1920).

We are in complete agreement with the main idea underlying Lieutenant-Colonel Burke's valuable communication—namely, that the vast majority of cases of recently acquired syphilis and gonorrhoea can be adequately treated without removal from the divisional area and without complete loss of the man's services. In connexion with the treatment of early syphilis Lieutenant-Colonel Burke, "though not normally an advocate of the concurrent intermittent method of therapy," is "of the opinion that in the special circumstances—treatment in the field—that method should be adopted." As this concurrent intermittent treatment is the method which has been used successfully in the Edinburgh V.D. Clinic for the last twenty years, the following comments have the backing of an extensive experience. This has convinced us that the concurrent administration of arsenic and bismuth from the beginning of treatment affords the most intensive attack on *T. pallidum*. We aim at giving this dual therapy in such a way that the patient is rapidly rendered non-contagious and is not prevented from carrying on his ordinary civilian occupation, or even handicapped in doing so, or deprived of leisure time by frequent attendances.

Does not the weekly administration of 1 gramme of arsphenamine (? arsphenamine diglucoside) represent an ideal rather than a practicable proposition? We find that many patients will not tolerate more than 0.6 gramme "914" weekly, and, provided that bismuth is given concurrently, higher weekly dosage is not required. Three intravenous plus two intramuscular injections per week for eight successive weeks would occupy an unnecessarily large amount of the time of the soldiers and also the medical officers.

We recommend the following scheme as more practicable than that advocated by Lieutenant-Colonel Burke in that it encroaches less on the soldiers' time, and, if carried through, ensures a prospect of cure if not in 100 per cent. of cases at least in 99 per cent. The relapse rate in 675 male cases of early syphilis treated in the Edinburgh clinic was 0.9 per cent.

First or Unit Course

Week	Neoarsphenamine ("914") intravenously gramme	Bismuth intramuscularly gramme
1	0.3 + 0.45	0.2
2	0.3 + 0.3	0.3
3	0.6	0.3
4	0.6	0.3
5	0.6	0.3
6	0.6	0.3
7	0.6	0.3
8	0.6	0.3
9	0.6	0.3
10	0.6	0.3
Total	6.15	2.9

This unit course is followed by an interval of four weeks, and four unit courses are given provided the blood Wassermann (if positive at the start) be reversed by the first course. Completion of the active treatment is followed by three-monthly serological tests (blood Wassermann and Kahn) for two years. Provided bismuth is given from the start, it is, in our opinion, unnecessary after the first fortnight to give either the "914" or the bismuth more often than once weekly. Also, if the "914" is given twice weekly in the first week or fortnight it is sufficient to give the slowly absorbed bismuth metal once weekly. We prefer injectio bismuthi *B.P.* to the oil-soluble preparations; with the former, once-weekly administration means less stiffness and less pain in the hip muscles. Moreover, the gap in the administration of the arsenical drug is reduced (in our scheme) from seven weeks to the safe interval of four weeks. For those physicians who wish to use neoarsphenamine instead of stabilarsan, ampoules of sterile distilled water could be made just as readily available as those of sodium thiosulphate.

The plan of treatment outlined above, as contrasted with Lieutenant-Colonel Burke's, effects a saving in time and expense, with possibly greater efficiency through greater practicability. The adoption of this scheme would mean that after the first fortnight (during which "sores" are healed and non-infectivity secured) the soldier is available for full duty except for a once-weekly visit to the divisional treatment unit. Diagnosis and treatment would be facilitated and economy effected if the unit were a mobile one housed in a specially equipped ambulance car.

The routine to be followed in cases of gonorrhoea would be simplified without loss of efficiency by omitting irrigation during the first five days of chemotherapy. In cases in which the discharge persists, use irrigation of the anterior urethra for five days with a 1 in 10,000 solution of potassium permanganate, followed by five days of posterior irrigation with the same solution. Cases which resist this regime should be evacuated to a base hospital. A higher proportion of cures would be attained by using a higher initial dosage of sulphapyridine (M & B 693)—for example, six grammes in the first twenty-four hours and five grammes in the second. Administration of tablets of nicotinic acid in doses of 0.2 to 0.5 gramme per diem along with sulphapyridine reduces the toxic effects without diminishing the therapeutic efficiency.

It should also be stressed that the incidence of venereal disease among the troops can be minimized by sufficient provision of methods of prevention, such as facilities for prophylactic washing, irrigation, and inunction with mercurial cream, and the issue to all who desire them of condoms and prophylactic packets. New methods of prophylaxis and other means of minimizing infection may be evolved.

In conclusion, we wish to express our appreciation of the value and importance of the suggestions contained in Lieutenant-Colonel Burke's letter. Possibly the Army medical

authorities have already forestalled them by introducing some similar organization, and information on this point would reassure the public that every effort has been made to prevent the tragic sequels of venereal disease.—We are, etc.,

R. C. L. BATCHELOR,
ROBERT LEES.

Edinburgh, Nov. 10.

SIR,—Lieutenant-Colonel E. T. Burke's scheme of treatment for early syphilis as suggested in his letter is surely far too long and unnecessarily complicated.

I have since 1924 practised in the clinics I direct a course of treatment in primary and secondary syphilis which secures serological and clinical cure in 100 per cent. of cases and which gives a completely normal cerebrospinal fluid in the fifth year after infection. One course invariably reverses the Wassermann in sero-positive cases, but to ensure cure three courses are given—one three months after the first, and the third six months after the second. Two days in each week, not more than four days apart, are set as injection days. If Monday and Thursday are chosen, then 0.3 gramme N.A.B. is given on Monday and 0.45 gramme on Thursday until twelve injections have been administered; and every Monday 0.2 gramme of bismuth as bismuth oxychloride is given. In short, this course accomplishes in eighteen weeks what the suggested course takes forty weeks to do, and calls for thirty-six intravenous injections as against ninety-six, thus saving time and money.

I do, however, find myself in agreement with Lieutenant-Colonel Burke on the choice of sodium thiosulphate, since in 1925 I instituted its use as a vehicle for intravenous "914" in the treatment of syphilis.—I am, etc.,

A. O. F. ROSS,
Venereal Diseases Officer, City and Port of Liverpool.

Nov. 9.

SIR,—During the 1914–18 war I had considerable experience of the treatment of venereal disease in the Army at the Brighton Grove Military Hospital of some 1,200 beds. At this period hospitalization until cure of every case was considered essential. I can therefore endorse Lieutenant-Colonel E. T. Burke's views as to the enforced idleness and wastage of man power so urgently needed elsewhere.

Since 1918 I have been continuously associated with the civilian clinics in this area, and have long since abandoned the view that hospitalization of other than complicated cases of venereal disease is necessary or desirable. The incidence of complications in gonorrhoea has been remarkably low, considering that over 50 per cent. of the patients are engaged in heavy manual labour. Cases of proved accidental contagion have been rare—chiefly vulvo-vaginitis in pre-pubertal girls and an infrequent case of *lues insontium*. The civilian clinics have adequately proved the possibilities of ambulatory treatment and the little risk of accidental contagion even in overcrowded areas.

In syphilitic infections the thrice-weekly dosage advocated by Lieutenant-Colonel Burke is impracticable in this area, but the results of a once-weekly dosage of 0.6 to 0.75 gramme of neoarsphenamine and insoluble bismuth (0.2 to 0.4 gramme) or mercury (1 to 1½ grammes) have given a high clinical and serological cure rate in early infective syphilis in the absence of default, gross intolerance, etc. Treatment is given in courses of ten to twelve weeks, totalling 4.65 to 6.75 grammes of "914" and 2.4 grammes of bismuth, and the patient receives three courses after his first negative Wassermann reaction. In my opinion Lieutenant-Colonel Burke's suggestions do not go far enough, as his "thrice-weekly" course necessitates considerable interference with duty, which would be obviated by the once-weekly system.

No uncomplicated case of gonorrhoea or syphilis should be off duty, whether in the front line or not. Investigations and the treatment could be carried out at battalion headquarters or other suitable rendezvous by mobile specialist units attached to brigade or divisional headquarters.

In gonorrhoea treatment with sulphapyridine (M & B 693) in initial doses of 4 grammes daily for three days, followed by two three-day courses of 3 to 4 grammes daily, has been well tolerated and given 80 to 85 per cent. cures on a three-months observation basis. Relapses and refractory cases are invariably associated with sealed-off foci in the prostate and vesicles or in the urethral glands. Late relapses have been noted up to seven months after infection. Despite apparent rapid cure, investigation for residual infections and tests of cure over a considerable period of time are necessary if considerations other than those of fighting fitness are to be taken into account.

In chancroid, where this is suspected in the absence of spirochaetes in a sore, treatment should be started forthwith with sulphanilamide or sulphapyridine. The use of these drugs will not prevent the demonstration of spirochaetes in any later examination, but will prevent any risk of phagedaena, etc.

With regard to records, every man undergoing treatment should carry a personal V.15, while records would also be kept by battalion headquarters or by mobile V.D. units, and transferred with the man.

Much of the above is also applicable to the "home front" in view of the urgency of conserving hospital beds for A.R.P. eventualities.—I am, etc.,

S. THOMPSON.

Newcastle-upon-Tyne, Nov. 10.

SIR,—I was very glad to read the letter of Dr. C. Hamilton Wilkie in the *Journal* of November 11 (p. 974) regarding mine upon the above subject which appeared in the previous issue. Dr. Wilkie's unit course is certainly an excellent one; and, since his whole schedule of treatment by four such unit courses administered in a period of fifty-two weeks gives an efficiency index of 110, the cure rate must be one of 100 per cent. All treatment schedules for acute syphilis lasting for from twenty-six to forty-eight or more weeks whose efficiency indexes do not fall below 60 give such a cure rate. The schedule I advocated in my letter has an index figure of 116.

I had carefully considered the utilization of mobile V.D. units, but for a variety of reasons I came to the conclusion that stationary V.D. sections would be preferable. My view is that a soldier suffering from venereal disease should, while undergoing active treatment, be admitted to a V.D. section of the R.A.M.C. stationed in the corps or other area in which his unit is situated, and that he should be continually under observation. If, for example, the V.D. section was attached to a C.C.S. the man would, during his course of treatment, perform general duties, guards, etc. According to my suggested schedule of treatment for syphilis he would, as Dr. Wilkie points out, receive in every seven-day period three intravenous and two intramuscular injections. I regard that as being a most valuable method of keeping the man under closer and more continuous observation than he would be if Dr. Wilkie's suggestion were adopted. If complications due to treatment are to be avoided or diagnosed at the earliest moment the patient cannot be seen by the medical officer too often. I am convinced that it would be a bad principle to treat the man in his own unit by means of a mobile V.D. section, when he would be seen only twice weekly.

I feel sure that Dr. Wilkie and every experienced venereologist consider that it is to the advantage of the patient, the Army, and the civil population at home that all cases of venereal disease should be treated in the field.—I am, etc.,

E. T. BURKE,
Director of the L.C.C. (Whitechapel) Clinic.

London, E.1, Nov. 11.

Blood Transfusion

SIR,—I have read with interest Dr. J. L. Hamilton-Paterson's article on the use of stored blood for transfusion (*Journal*, November 4, p. 908). In five years of blood transfusion service in the University Medical Clinic of Turin, Italy, and in a field hospital in Spain, I have had a fairly good experience on this matter, both in peace and war; my conclusions (*Minerva Medica*, 1938, **23**) are in complete agreement with those of Dr. Hamilton-Paterson. In the Spanish war no fewer than ten thousand transfusions were performed with blood conserved in a citrate–saline mixture (Russian

method) and severe reactions were never observed. Very often, however, I had the impression that the same therapeutic result could have been obtained with a simple intravenous injection of the same dose of saline. The dramatic improvement which follows the pure-blood transfusion rarely appeared after stored-blood transfusion. The value of stored blood is definitely inferior, and, therefore, pure-blood transfusions should be used whenever possible.

Obviously enough, near the front line, in field hospitals, and in other mobile units the casualties requiring urgent transfusion are too numerous in comparison with the volunteer donors available in the zone, and stored blood is absolutely indispensable during a battle. Only when there is no rush of wounded is it possible to perform single fresh-blood transfusions, usually with blood given by the staff of the sanitary unit. In towns, where the casualties should amount to only a small percentage of the population, fresh-blood transfusions are possible and could be employed as a general routine, while only a small amount of blood might be kept stored for exceptional requirements. Blood donors classified according to their residence and the place of their employment could be available a few minutes after a telephone or personal call.

On the other hand it must be kept in mind that the stored blood also requires some preparation at the moment of its use, since it must be warmed to the body temperature, avoiding any exposure to a fairly superior heat. That cannot be made in advance, because the blood must be kept in a refrigerator as long as possible in order to avoid haemolysis. Thus the time of its preparation has no advantage over that of waiting for the arrival of a donor living in the neighbourhood. Furthermore, in all cases in which the stored blood will not be used before the expiration of its conservability there is an enormous waste of blood as well as of material for its collection and conservation.

In view of its therapeutic and economical advantages the fresh-blood transfusion service might be adopted in many towns, also in war time, and there is no reason why it should not operate smoothly. The stored blood should be reserved, so far as possible, to the very war zone, where it will be too difficult to find a sufficient number of donors at the moment when the most transfusions are required.—I am, etc.,

London, W.2, Nov. 7. PAOLO RAVENNA, M.D.

Gas Injuries to the Eye

SIR,—In the *A.R.P. Handbook No. 3*, page 59, line 12, the treatment for injury to the eyes from mustard gas includes the use of 1 per cent. atropine ointment every twelve hours. This no doubt was the proper treatment for the cases in the last war, when the majority of victims of mustard gas were soldiers under 40 years of age. Now that many old or middle-aged persons may be gassed the danger of precipitating or increasing glaucoma by such treatment is very great. I think it will be agreed that, even in the emergency of a gas raid, homatropine alone should be used instead of atropine for all but the young, and after the first application should not be repeated except under skilled medical advice. Otherwise terrible catastrophes may occur.—I am, etc.,

Colchester, Nov. 12. AGNES ESTCOURT-OSWALD.

SIR,—It would be desirable to know if Brevet Colonel L. T. Poole's opinion, as conveyed in his letter in your issue of November 11 (p. 972) addressed from the War Office, is the official Army medical view of the immediate treatment of mustard gas in its effects on the eyes—namely, that Nature with its lacrimal secretions supplies the best and apparently only first-aid measure required.

From Professor J. H. Burn's letter in the same issue of your *Journal* it appears that the German medical service uses other measures. In the French army a different treatment is in use.

For the almost suicidal pain at first experienced what does Colonel Poole suggest? Apparently only tears!—I am, etc.,

London, S.W.1, Nov. 11. REDMOND ROCHE.

SIR,—I have had no experience of first-aid treatment of mustard-gas burns of the eye, but during my sixteen years' service as ophthalmic surgeon at the Liverpool Pensions Hospital I saw many cases of its after-results.

For the recurrent attacks of subacute inflammation, keratitis, and severe pain I found that instillation of cod-liver oil was by far the best treatment. Relief of pain was immediate, followed by rapid disappearance of corneal roughness and lacrimation; and the treatment was easily carried out at the patient's home. First-aid treatment with cod-liver oil could do no harm and would relieve pain and promote surface healing. I would like to make a further suggestion about this remedy. It might be worth while to try the effect of the inhalation of atomized cod-liver oil in the treatment of pulmonary gas cases of the chronic type, perhaps even of the acute cases.—I am, etc.,

Hoylake, Cheshire, Nov. 13. EDGAR STEVENSON.

SIR,—I must ask your forgiveness for joining in this vital discussion, as, frankly speaking, I never yet saw or treated a similar case. But it is obvious that we are powerless against the chemical reaction of the direct contact of mustard gas with the eye, and we can only fight against the secondary infection complicating the initial injury. From that point of view I see a great similarity with the acute gonorrhoeal conjunctivitis of adults, and I usually had very striking results by giving the patient a protein shock (I prefer the T.A.B. vaccine) and continuous irrigation with a weak solution of potassium permanganate. I should be grateful to ophthalmologists of more experience than myself for their opinion of this kind of treatment in mustard-gas cases where the vascular system is not involved as yet.—I am, etc.,

London, E.1, Nov. 4. N. PINES.

Psychological Casualties in War

SIR,—I have read with great interest the letters of Dr. T. A. Ross and Dr. R. D. Gillespie in your issue of November 4 (pp. 925 and 926), and my many years' experience of psychiatry allows me to appreciate much in those letters.

My experience of the last war was that many potential mental cases were conscripted, in spite of strongly worded opinions of myself and others. Cases of adolescent insanity with short remissions, cases of mild epilepsy with post-epileptic automatism, and cases of hallucination of hearing and delusions of persecution were taken into the Army. Unfortunately I could not find out what had happened to them, but I knew they were quite unfit to be fighting soldiers. It would be of interest to know what became of these men, as also the number of men discharged on account of mental disease of some sort. In my medico-legal experience with cases under the Employers' Liability Act I have had difficulty in getting hold of the discharge papers of the plaintiffs, but in each case I ultimately found they had been discharged on account of delusional insanity, which had a great bearing on the ultimate result of the actions.

My experience while I ran a home for borderline cases was that as the war proceeded lady patients were falling off, and I soon found the reason: occupation of all sorts was keeping them well. Some took up Red Cross work, some helped in canteens, some drove cars and ambulances, while many took the place of conscripted men in banks and other places of business. In consequence their tendency to psychoneurotic ailments disappeared and many homes for such cases suffered very severely.—I am, etc.,

Bournemouth, Nov. 7. L. A. WEATHERLY, M.D.

SIR,—The letter from Dr. T. A. Ross in the *Journal* of November 4 (p. 925) calling attention to inadequate mental history taking and its unfortunate results of men called up or volunteering for service in H.M. Forces is one of first importance. Dr. Ross invites those of us who have met with cases similar to the two which he describes to write to him concerning them so that he may assess the gravity of the problem with a view to its solution. I hope that those who can assist him in this way will avail themselves of his invitation, for, if

I am not mistaken, the trouble is likely to increase and not diminish unless something can be done.

I too have already since this war began met with two instances of men being accepted for service who, had their histories been taken more carefully, would undoubtedly have been rejected. I would send details of these cases direct to Dr. Ross, as he asks, but it occurs to me that if I send them to you perhaps you might consider it useful to publish them in your columns if for no other reason than to call further attention to Dr. Ross's important letter.

Case 1.—A young man aged 21 was called up for service in the Militia during the summer. He was immediately examined, passed as fit, enrolled, and duly went to camp, from which he promptly ran away. He appeared at home, was seen by the family doctor, who correctly diagnosed acute anxiety neurosis, and a certificate to this effect was sent to the authorities. The father, whilst awaiting "instructions," brought the patient to me. At the first interview, which was short as I was hurried and the matter was urgent, it became obvious that the man was but poorly adapted to life. He hated school, never made friends with any boys or masters, took no interest in usual boyish occupations, but preferred to play the piano, jazz, etc., and to "make up," preparatory, he said, to going on the stage one day. His parents tried ineffectually to dissuade him from this course and offered him a choice from all the professions, but he refused. When attempts were made to discuss these matters with him he would become sullen, threatened suicide, and would disappear for hours on end. This behaviour, virtually blackmail, rendered his parents powerless. This, I think, is enough to show how unsuitable he is for military training, anyway at present. And I am of opinion the authorities should be thankful he deserted and thereby spared the country much expense and himself much suffering.

Case 2.—A man aged 28, a university graduate doing well in law, offered his services to the Army and was passed as medically fit. Shortly afterwards, while continuing his work and awaiting orders to go for training, he was suddenly seized with panic in a train. This attack was followed by others in quick succession, every day and with increasing severity. He came to me for advice, and his history as given that day revealed that for some years he had had a struggle with panics and fears—fear of his evangelical irritable father, fear of God, fear of men, and fear of going mad as a sister had died in an asylum. He had fought these fears and, as he said, had "conquered them," and was perfectly free from their effects when he offered himself for service. He did not mention his old trouble then, although probably given an opportunity to do so, because he did not realize its importance. Fortunately enlistment revealed, in time, the true state of affairs.

While on this subject may I say how helpful it would be for all concerned if some degree of uniformity could be decided upon as to the advisability of passing as suitable for service men who have had serious "nervous breakdowns" but who are now, after treatment, quite well. Two weeks ago an old patient who had had a schizoid illness with well-organized delusions was told by a doctor who knew he had once had a mental illness, but who did not know the history, that he was fit for service. Actually he was rejected because he was truthful enough to say he had been ill, but under the impression gained from the doctor he might, almost justifiably, have not mentioned the fact.—I am, etc.,

Byfleet, Surrey, Nov. 6. H. MARK PALMER.

Psychological Treatment Centres

SIR,—Dr. R. D. Gillespie (*Journal*, November 4, p. 926) suggests that during war "mental breakdowns of any sort may be fewer in the civil population than during peace." As evidence he quotes the somewhat lower incidence of admissions to mental hospitals during the years 1914–18. This appears to be his chief argument for adopting an optimistic view regarding the probable effects on mental health of the present war. But what of the years following 1918? Does Dr. Gillespie assume that the great war had no effect on psychoses certified then? Those with experience of mental cases know that a very large proportion of the psychic casualties of the last war, both civilian and service, did not become notifiable until some years after the war.

I think it is axiomatic that a period of great national stress, combined with a profound disturbance of normal routine, a period moreover of privation and danger, must produce more psychosis and neurosis. The disturbance of war involves a two-fold change—first peace to war, and then war to peace. The second change may be the more devastating for some individuals. I believe that potential subjects of psychoses given a fortunate environment may succeed in passing through life as useful citizens without quitting the ranks of those apparently normal mentally. On the other hand, any of us is capable of becoming psychotic. Wordsworth wrote of "man's unconquerable mind." He was wrong. We have only to think of solitary confinement in a dark and dirty mediaeval dungeon to realize this.

It is rather curious to find that Dr. Gillespie thinks that the British public will stand the stress of war well, but that "too wide advertising of emergency psychotherapy" causes a risk at the present time of "creating a national hypochondriasis." Centres such as Dr. A. C. D. Telfer suggests are required. Let us save such people as we can from the appalling fate of ending their days in a mental hospital or even of becoming chronic neurotics.—I am, etc.,

London, S.E.14, Nov. 4. ALLAN A. MACDOUGALL.

X-ray Examination of Militiamen

SIR,—I have been following with great interest the correspondence in your columns on the subject of *x*-ray examination of the chest in militiamen. Having myself during the last three years screened over 10,000 industrial workers near London, I am very much aware of the necessity for *x*-ray examination of militiamen as part of the examination to be carried out on admission for military service. As I pointed out at the twenty-fifth Annual Conference of the National Association for the Prevention of Tuberculosis in June, 1939, my *x*-ray examinations showed that nearly 1 per cent. of the industrial population (exactly 8.3 per thousand, of which 0.2 per cent. are men and 1.2 per cent. are women) were found to be suffering from active pulmonary tuberculosis and had to be admitted into hospitals or sanatoriums for treatment. The workers were men and women between the ages of 14 and 55, and no definite preference of the disease for any age could be found.

I cannot agree with Dr. Gregory Kayne (*Journal*, October 7, p. 745) that *x*-ray examinations carried out by non-expert radiologists or physicians not specialized in tuberculosis are more likely to be a disadvantage than an advantage to the authorities on account of the mistakes made in interpretation of the findings. The interpretation of lung shadows by screening can easily be learned by any general practitioner with average intelligence in a few weeks, and with the help of *x*-ray photographs and sedimentation test of the suspected cases a fairly good judgment can be exercised about the activity of the lung process. Where there is any doubt the cases found active on routine examination can still be submitted to expert radiologists and tuberculosis physicians for opinion—as is always done in tuberculous cases found among the workers—for a final decision. According to my findings that 0.2 per cent. of working men are suffering from active pulmonary tuberculosis, about 1,000 men of the 500,000 standing Army are now doing heavy physical training and are exposed to all weather conditions, whereas they ought to be in sanatoriums having treatment for their lung disease. As the screening is bound to miss about 10 per cent. of the early infiltrations the estimated figure has to be put accordingly higher.

And now a word about screen photography. This method, in an improved form, has been compared with fluoroscopy and radiography by Burger of Eindhoven on 200 patients, and he found that radiography and screen photography gave about the same result, but the latter is in some respects superior to fluoroscopy. It is quite possible that some authorities—according to Dr. Kayne in the *Journal* of October 7 (p. 745)—consider this method unreliable, but I do not happen to know many methods in medicine about which all authorities agree. Whichever method is carried out, the fact still remains that we are in a position to prevent unnecessary suffering to a great many people and save a great deal of expense to the country, but we just do nothing about it.—I am, etc.,

London, W.1, Nov. 6 L. BANSZKY.

A Drop-wrist Splint

SIR,—By "dropped wrist" one usually infers dropped fingers and thumb—that is, an involvement of the posterior interosseous branch of the musculo-spiral nerve. If Mr. J. S. Kellett Smith means that his splint, illustrated in your issue of November 4 (p. 914), is literally one for a paralysis of extensor carpi radialis longior, brevior, and ulnaris only, well and good; but if not, I have seldom seen a worse one.

The illustration shows that the metacarpo-phalangeal joints of the fingers are flexed at an angle of 45 degrees and that the flexor longus pollicis is strongly in action, and in addition that there is no thumb abduction. In other words, the fingers and thumb are gripping the splint, and I cannot believe that this produces a satisfactory relaxation of extensor communis digitorum, extensor longus pollicis, brevis pollicis, and extensor ossis metacarpi pollicis. I can understand the men "appreciating" his splint, because when wearing it they could use their fingers and thumbs. However, his answer may be that he means "wrist-drop" only.

To maintain full relaxation in a complete musculo-spiral paralysis below triceps, nothing, in my opinion, beats a light long aluminium splint with thumb piece.—I am, etc.,

JOHN SAINSBURY, M.B., B.Ch.,
Late Medical Officer i/c Special Surgical
London, W.1, Nov. 10. Military Hospital, Ducane Road.

Administration of A.R.P. Casualty Services

SIR,—I read with interest the views of your correspondent "Casualty Service" in the *Journal* of November 4 (p. 929).

On the unification of the A.R.P. casualty services and hospital services and their co-ordination with the existing State medical services will depend the saving of life and mitigation of suffering as a result of enemy bombardment of the civil population. As regards training and recruitment accepted standards throughout the country should be arrived at; there would be no objection to local authorities conducting their own courses and examinations provided a recognized standard was reached in both cases. The administration of the A.R.P. casualty services should be in the hands of a competent medical officer. Such officer should wherever possible be the medical officer of health. He should be held responsible for the efficiency of the services in his area and to this extent given commensurate authority; in matters of less degree he should be given full powers, but major issues should be subject to the approval of higher authority. All this would have to be worked out, as it already has been in the defence medical services. Collective training should be carried out under the direction of the medical officer of health with the assistance of the local A.R.P. organizer and his staff; combined training likewise, along with the heads of the other services.

The suggestion of a sessional fee for attendance at a first-aid post during a raid would not appeal to me; so much is being done voluntarily that this additional demand seems somewhat invidious. Nurses at first-aid posts are as essential as the posts themselves. One nurse per post is well-nigh useless unless she is supported by several trained auxiliaries. The important point is that these people should live within easy reach of the post in order that it may be manned at very short notice. Only in very few instances indeed will this be found to be the case, and because of this I am very doubtful as to the ultimate value of first-aid posts. If, on the other hand, first-aid posts are to be staffed by inferiorly trained personnel who may or may not be available at short notice, these units as at present planned will be a menace rather than an advantage in reducing the air raid mortality rate. It is certainly expecting too much of first-aid-party personnel to decide the disposal of casualties on the spot; it would not be easy for experienced medical men working, as they might be, in protective clothing and respirators under subdued light. The alternative is to have medical officers on call who would go along with the first-aid parties to the scene of action. If, as we are told, medical officers would not be available, then it would seem far safer to send all casualties direct to hospital, where they could be seen at once by medical officers, who would decide their disposal.

Mobile units sound very attractive, but the delay involved in setting up a first-aid post at a building, if any, at or near the scene of disaster involves a serious time factor, and I doubt very much whether it would not be better to send all casualties direct to hospital after the most elementary first-aid treatment. A first-aid post adjacent to a hospital is in my view essential. The hospital must inevitably receive a number of casualties which after all only require elementary first-aid treatment. This would certainly be the case if casualties for some reason or another were sent direct—the nearest first-aid post might be too far away, and the mobile unit out of action.

The most useful function of scattered first-aid posts is that of decontamination of unwounded or slightly wounded casualties. Occasionally one will meet the case—a pretty desperate one—where the medical officer might have to decide whether to tackle the decontamination or the injury first. With skilled assistance both could be dealt with at the same time. There can be no doubt that any means at all which will expedite decontamination should be carefully considered.

I rather thought that the equipment of first-aid posts was of a high grade, much higher than I anticipated, and it obviously caters for a standard of first aid much more advanced than is generally recognized. Whether this will turn out to be a good or a bad thing remains to be seen.—I am, etc.,

H. MAINWARING HOLT, M.B., B.S., D.P.H.,
M.O.H., Borough of Keighley; Controlling Officer,
A.R.P. Casualty Services, Keighley, Bingley,
Nov. 7. Shipley, and Denholme Joint Area.

Genito-urinary Infection in Childhood

SIR,—It was gratifying to find in the excellent article by Dr. Wilfrid Sheldon (*Journal*, September 9, p. 551) that he emphasized the need for a complete urological examination if pus and organisms were still present in the urine after the acute symptoms had subsided. It is possible that the more frequent occurrence in male infants may be due to the greater possibilities for minor degrees of stasis owing to maldevelopment or under-development of the urinary tract below the bladder sphincter.

The need for constant supervision of the reaction of the urine in these cases is repeatedly stressed, as it must be to-day. In my opinion litmus paper is obsolete for this purpose, and should be replaced by definite estimations of the urinary *p*H. I have found that "nitrazine" paper manufactured by Squibb is sufficiently reliable for constant clinical use. As an example, if the urine has a constant *p*H value of 7 or 7.5 it is useless to give any mandelate until the *p*H has been brought nearer 5. If the administration of acidifying agents fails to influence the *p*H the infection is probably due to a urea-splitting organism, in which case urinary antiseptics acting in an acid medium are useless.—I am, etc.,

Durban, South Africa, Oct. 5. S. MCMAHON.

Lambliasis

SIR,—In your annotation on lambliasis in the *Journal* of November 11 (p. 961) the only reference to treatment is the statement that "it appears that arsenical preparations, especially stovarsol, are effective." Since Pierre Martin recorded in 1937[1] the disappearance of *Giardia* from the stools of one of his patients treated with atebrin by Professor Galli-Valério there has been a very considerable number of papers confirming the effect of this drug, or its French equivalent quinacrine, on this infection, and the remarkable results obtained would suggest that this preparation should be the first considered where treatment of lambliasis is indicated.—I am, etc.,

London, W.1, Nov. 10. F. MURGATROYD.

[1] *Rev. méd. Hyg. trop.*, 1937, **29**, 33.

Crataegus Oxyacantha in Hypertension

SIR,—The significant feature in Dr. James D. P. Graham's investigation of tincture of crataegus (*Journal*, November 11, p. 951) is the reduction of the pulse pressure caused by the large doses of the tincture. In every case except Case 8 the systolic pressure fell more steeply than the diastolic. This reduction of the pulse pressure I consider the chief clinical indication for crataegus medication. I have used it for a number of years with success in such cases, employing, however, much smaller doses (1 to 5 minims)—first, in those hyperpietics with a hypertrophied left ventricle, a regular pulse, and early signs of failure, such as breathlessness and paroxysmal nocturnal dyspnoea; and, secondly, in those patients who are recovering from a coronary thrombosis. I can confirm its failure in auricular fibrillation.

Dr. Graham had selected from his hyperpietics a small group whose renal or cerebral arteries had broken down under high pressure. I hope that if he extends his investigations he will next select a group in which failure is manifested in the heart itself.—I am, etc.,

Bristol, Nov. 12. FRANK BODMAN, M.D.

Immunization against Diphtheria

SIR,—Sir John Ledingham deserves to be congratulated upon his lecture and masterly summary of the present position of immunization (*Journal*, October 28, p. 841) and also because he had the courage to label certain societies as "anti-social." He uttered a truth when he suggested that liberty can become anti-social and that when it does it should be curtailed. I would suggest that he give another lecture and pillory by name these anti-social societies and call for their suppression. The attitude of the State and the profession towards vaccination has helped their propaganda and should be reviewed. Small-pox is not the scourge it was when compulsory vaccination was imposed. The danger having passed, the vaccination should pass too. If not, the law is held in contempt. It is bad when the law is held in contempt or becomes unenforceable. A law is bad when it is not necessary and is vexatious.

On the other hand, diphtheria is recognized by all as a dangerous disease. The mass of the people are willing to submit to a measure which will guarantee them a reasonable chance to escape from it. This is borne out by the attitude of the mass of Irish people towards immunization. In private practice parents ask for the treatment. I submit that the public are aware of the existence of this potent preventive treatment and wish it to be administered in an effective manner. I believe they would accept compulsory immunization and welcome it.—I am, etc.,

Clones, Nov. 4. M. G. KIERANS.

Virtues of Brown Bread

SIR,—Work on nutrition, particularly here in India, of Sir Robert McCarrison, and on vitamins throughout the world, has established that white bread as commonly used in England lacks vitamin B and is inferior to brown bread milled from whole wheat. I suggest that the British Medical Association urges the Government to bring in measures to encourage, if not to enforce, the eating of brown bread by everyone, at least during the war. At no time can we afford to waste the health and vitality of the nation—least of all during the present war.—I am, etc.,

GEOFFREY TAYLOR, Major I.M.S.,
Nov. 1. Professor of Clinical Medicine, Lahore.

In reply to numerous inquiries the Clothes Room Committee of the Ladies' Guild of the Royal Medical Benevolent Fund announces that the work is being continued throughout the present national emergency. Existing conditions make every effort much more difficult, but it is hoped that the committee may have sufficient support to help all beneficiaries. Parcels of clothing can be sent as usual to B.M.A. House, Tavistock Square, W.C.1.

Obituary

A. P. BEDDARD, M.D., F.R.C.P.

Consulting Physician to Guy's Hospital; Chairman of the Pharmacopoeia Commission

We regret to announce the sudden death on November 8 at Sandiway, Cheshire, of Dr. Arthur Philip Beddard, who was for many years a member of the senior staff of Guy's Hospital and in recent times served as chairman of the British Pharmacopoeia Commission. Dr. Beddard was vice-president of the Section of Anatomy and Physiology at the Annual Meeting of the British Medical Association at Belfast in 1909, and vice-president of the Section of Medicine at the Brighton Meeting in 1913. With his passing at the age of 72 there is the loss of an outstanding physician of the older school who had a real flair for clinical medicine.

He was educated at Shrewsbury School, where at a very young age he became head of the school and then was sent to work under the late Professor Ray Lankester in the University of London. The following year he entered Trinity College, Cambridge, of which he was a science scholar, where he studied comparative anatomy, and in both parts of the tripos and passed with first-class honours. In 1891 he decided to take up medicine and entered Guy's Hospital, graduating M.B., B.Ch.Cantab. in 1897. He gained his doctorate in 1899 and was made a Fellow of the Royal College of Physicians in 1903. His career had always been basically scientific, for having had such a distinguished training in biology he became demonstrator of physiology with the late Professor M. S. Pembrey and Professor E. H. Starling, with whom he did much valuable research work on problems of respiration and on functions of the kidney. At the same time he lectured in pharmacology at Guy's, and always retained throughout life an interest in this subject which led him after retirement from hospital practice to be chairman of the British Pharmacopoeia Commission. During these years of demonstrating physiology Beddard was appointed assistant physician and later became physician and consultant physician to the West London Hospital. In 1902 he took the vacancy created by the retirement of his godfather, Dr. Pye-Smith, from the Guy's staff, and he continued his work as a physician at Guy's Hospital until his retirement in 1927.

As a teacher he was outstanding; with an orderly mind of his own he had the great advantage of being able to impart his knowledge to his students, with the consequence that his teaching rounds at Guy's were always well attended, and no one went away from any round without a feeling of an afternoon well spent. He hated long names which often cloaked ignorance of a subject, and was particularly caustic with anyone who made use of subterfuges of any kind. His outspoken methods and utterances against quackery and ignorance of the elementary principles of biology and medicine caused him to be feared by some and to clash with others. But his

honesty of purpose and his outstanding ability were recognized and admired by all. As a clinical observer, no detail was too small to be overlooked, and he was never content with a diagnosis unless he could fit all the known facts of the case into the making of the diagnosis. His last clinical round at Guy's will never be forgotten by those present, who included a number of the honorary physicians and surgeons. At the dinner in his honour which followed, every past house-physician was asked to tell two true stories of Beddard, and the quality of his quiet humour was shown not only by the quality of the stories but by his reply, in which he congratulated those present on the stories told but said he had no knowledge of any of the incidents recalled! As a physician he made a specialty of chest work; no one could elicit physical signs from a chest in the way that Beddard did. Probably his love of music was a great factor in this, for he was a skilled musician and had a vast knowledge of music.

Beddard enjoyed exceptionally good health until five years ago, when, following influenza and bronchitis, he developed asthmatic signs, which continued to undermine his health. The sympathy of all his friends and past students will go in deep measure to his wife, son, and daughter, who survive him.

E. C. W.

Dr. C. H. Hampshire, secretary to the British Pharmacopoeia Commission, writes:

The name of Dr. A. P. Beddard will always be remembered in connexion with the *British Pharmacopoeia*. The first British Pharmacopoeia Commission was appointed by the General Medical Council in 1928, following upon an inquiry by a subcommittee of the Committee of Civil Research into the method of production of the *Pharmacopoeia*. The *British Pharmacopoeia, 1914*, was in need of revision, and it was desirable in the public interest that a new *Pharmacopoeia* should be produced in the shortest possible time consistent with thorough work. Dr. Beddard was appointed chairman of the Commission and entered enthusiastically upon his duties, bringing his great intellectual gifts to bear upon the many problems of policy and of detail which are involved in the production of a pharmacopoeia. He was largely responsible for the policy of developing the *Pharmacopoeia* as a book of standards, while still retaining in it those features which are necessary to the maintenance of its position as an authoritative guide to the medical profession in the choice and use of drugs. He was keenly interested in the collaboration which was effected with committees on pharmacopoeia revision in the Dominions, and in maintaining the influence and usefulness of the *Pharmacopoeia* throughout the British Empire. His great breadth of view was also shown by his interest in establishing and maintaining collaboration with the pharmacopoeia authorities of other countries, in particular of the United States of America.

For nearly four years the Pharmacopoeia Commission met weekly and, under the guidance of Dr. Beddard, dealt with the considerable volume of reports, comments, and criticisms furnished by various subcommittees and correspondents. Dr. Beddard's charm of manner and qualities of leadership made him the ideal chairman in these early years. In the chair he always displayed great patience, preferring to allow difficult problems to solve themselves in friendly discussion rather than to force an issue. In private he gave unsparingly of his time and thought to the details of the work. I shall always retain the memory of long afternoons spent with him pleasantly, and without tedium, in the examination of drafts or the revision of proofs. A flash of wit or a sarcastic phrase would often enliven the task. When the sixth *British Pharmacopoeia* was published in 1932 it could truly be said that he was prepared to take personal responsibility for every statement made in it.

Four years of similar devoted work went to the production of the *Addendum*, which appeared in 1936, and he retained to the end, notwithstanding failing health, the control of the preparation of the seventh *British Pharmacopoeia*, which is now approaching completion. Eleven years of unremitting voluntary toil on pharmacopoeia revision represents a considerable public service, which should not be forgotten. His death means a loss to pharmacopoeial work which will be deplored by all his colleagues and helpers. To me it means the loss of a friendly, considerate, and inspiring chief.

[The photograph reproduced is by Elliott and Fry, Ltd.]

MABEL CAMPBELL, M.A., M.B.

The death of Dr. Mabel Campbell, which took place on November 3 at Allendale, leaves Newcastle-upon-Tyne and district the poorer by the loss of one of its best-known medical women and one of the most respected and trusted of practitioners.

Lizzie Mabel Renwick Campbell was a daughter of the manse, born at Newton, her father being the late John Campbell, D.D., of Kirkcaldy, Fife. There were eight daughters, four of whom entered the medical profession. Mabel was educated at St. Andrews, where she graduated M.A. in 1906 and M.B., Ch.B. in 1909. Shortly afterwards she went to Newcastle as house-surgeon to the Eye Infirmary, thereafter joining Dr. Ethel Williams in her large practice. Not long after the last war she went into practice on her own account, and at the time of her death no doctor was better known or more beloved in a district far beyond the confines of Newcastle and its immediate vicinity. Dr. Mabel Campbell held numerous appointments, but was principally identified with the Royal Victoria Infirmary, where she was for years on the staff as one of the anaesthetists, and the Princess Mary Maternity Hospital as one of the honorary obstetric physicians. She had been a member of the British Medical Association since 1910. She acted as secretary of the Section of Obstetrics and Gynaecology at the Annual Meeting at Newcastle in 1921, and at the Glasgow Meeting in the following year was vice-president of the Section of Anaesthetics.

Professor Grey Turner writes: What we most admired in Dr. Mabel was her wonderful unselfishness and her desire to be helpful. She had the greatest regard for all that concerned the circumstances and environment of her patients and took an active interest in everything that concerned their welfare, and no one better appreciated the problems covered by those tragic words "domestic difficulties." It will never be known to what extent she acted as general adviser and friend to hosts of families in all walks of life, though it was always done unobtrusively and without the slightest idea of favours conferred. Her work for all that concerned the welfare of women and girls was most valuable. But she was also a good doctor, a healer of the sick, and had an almost uncanny appreciation of what could be done to relieve people, and it was easy to be caught out by some suggestion concerning treatment of which she had somehow become apprised while many of us were still ignorant. Her professional standing was recognized by the British Medical Association and the Women's Medical Federation, in both of which bodies she held office at one time and another. As an anaesthetist she stuck to the older methods, but in their use was an expert, and the cheery way that she approached her patients and the feeling of easy confidence which she inspired were a great help in many a difficult case. Punctuality was not her special forte, and who will ever forget her late arrival, out of breath and palpitating but absolutely unflurried, and straightway proceeding with her work as if she had been first on the scene! She loved the country and the open air, and would make extraordinary journeys at any time of day or far into the night, returning in the early morning just in time to start a day's work, telling everybody what a wonderful outing she'd made and how she wished they had been able to share her pleasure. She

was unselfish and generous to a fault, and would put herself to inconvenience if she could oblige a colleague or a friend, or, better still, one of her poorer patients. Her bravery in face of her last illness was something that can never be forgotten. Dr. Mabel had the art of conciliation developed to a high degree, and her younger friends and colleagues (and not only of her own sex) naturally turned to her in their difficulties, which were always most carefully considered. Her solution was always practical and to the point, for she was a realist, but a realist with a heart of gold. She was a fine judge of character and was very shrewd in summing up any situation where the human element played a part, and never forgot that "while the world changes man is always the same."

A colleague writes: Dr. Mabel Campbell's name will always recall to those who knew her a dynamic personality and a courage which not only upheld and inspired her patients but carried her herself through a long and painful illness, which she knew from the beginning could only have one end, with a steady cheerfulness and without one single word or sign of repining or regret. She inspired everyone whose personality touched hers with some measure of her vivid courage. She was a most competent doctor, never in a hurry with patients however long-winded, however difficult it might be to get the day's work in, and always ready to listen to complaints and attend to the most trivial details. Newcastle will long remember that vivid and handsome personality with flashing eyes and a ready smile in a very ramshackle old car. Her cars were always ramshackle, probably because she was always ready to lend them to all and sundry. She was an accomplished anaesthetist and an expert obstetrician. She will be remembered at the Princess Mary Hospital and the Gables Maternity Home for her cheerful service, unsparing of herself at any hour of the day or night. The women at the welfare centres will long remember the skill and knowledge of human nature which she so freely gave them.

Medical Notes in Parliament

Parliament will probably be prorogued on November 23 and a new Session opened on November 28. During the new Session legislation will be proposed for prolonging the life of the present Parliament till after the war.

Tyneside Blood Transfusion Service

On November 7 Miss Horsbrugh told Mr. D. Adams that the secretary of the Tyneside Blood Transfusion Service had been informed that any necessary expenditure incurred in grouping blood donors which could not be met from voluntary sources would be reimbursed on receipt, through the hospital officer, of vouchers showing the expenditure actually incurred. Up to date vouchers had been received for only £23 19s. 2d., and this had been paid. It was estimated that an additional £225 might be required for future expenditure, and if it proved necessary to incur this, and vouchers were forwarded, the cost would be met.

Medical Attention of Unaccompanied Children

On November 7 Mr. Groves asked the Minister of Health what precise arrangement had been made by his Department and the British Medical Association with regard to the treatment of unaccompanied children in reception areas, in view of the fact that a letter was sent from his Department to the Medical Practitioners' Union, dated October 15, 1939, referring to the agreed terms with the Association, and another letter, also from his Department, on October 27, stating that there was no formal agreement. Miss Horsbrugh replied that the arrangements provided that, as from the date on which the Government evacuation scheme took effect, sums calculated at the rate of 10s. a year for each unaccompanied child would be paid to the Local Emergency Committee, and from the funds so constituted payments would be made to medical practitioners on such basis, whether capitation or attendance, as might be found convenient. The amount paid covered the cost of attendance and the provision of medicines. The Medical Practitioners' Union was informed to this effect on October 5. As the arrangements were embodied in a letter from her Department which was accepted by the Association they were rightly referred to as "agreed terms," although the agreement was not formal.

Central Medical War Committee

On November 7 Mr. Groves asked if the Minister of Health would consider dissolving the Central Medical War Committee, which did not enjoy the complete confidence of the medical profession, and appointing in its stead the smaller and efficient Joint Committee on Medical Questions of the Trades Union Congress, which included among its members representatives of both the Medical Practitioners' Union and the British Medical Association. Miss Horsbrugh replied in the negative. She said that Dr. Elliot did not think that the change proposed would be justifiable.

Dr. Elliot informed Mr. Groves on the same day that since the constitution of the Central Medical War Committee on the outbreak of war the full committee had met twice. Fourteen members were absent on the first occasion, and nine on the second. In addition, there had been three meetings of the executive committee and one meeting of a special subcommittee.

In reply to a further question by Mr. Groves, Dr. Elliot said that a number of members of the Central Medical War Committee had been appointed without reference to any connexion they might have with the British Medical Association, and some of them were, in fact, not members of the Association.

In another reply to Mr. Groves, Dr. Elliot said that of the 44,608 qualified medical practitioners on the *Medical Register* and resident in Great Britain or Northern Ireland, 43,650 were included in the register kept by the Central Medical War Committee. The offers of service recorded in the register were, in the case of a number of practitioners, subject to their commitments to H.M. Forces or to local authorities or other bodies by which they were employed. He could not say how many medical practitioners had permitted their names to be included in the central register without any conditions or qualifications.

The 98 per cent. of the medical profession in the register of the Central Medical War Committee was not limited to medical practitioners who had signed the British Medical Association's scheme for the protection of the practices of doctors absent on war service.

Food Rationing

The Government has decided to take steps to enable the rationing of individual consumers to be put into operation. Instructions will be given to all Food Control Committees in the United Kingdom to issue the appropriate ration book for every individual consumer. There are only two commodities—bacon and butter—which the Government considers it necessary to ration, and even in the case of these two commodities it is not proposed to begin rationing yet. The actual date will be announced later. The Government does not desire to impose the rationing of sugar, and if each consumer restricts purchases to 1 lb. per head per week there will be sufficient supplies for some months. The manufacture of margarine has been greatly increased since the outbreak of war; the quantity of cooking fats available is equal to normal. In the case of meat adequate supplies should continue to be available. Mr. W. S. Morrison, in rationing butter, will do what he can to make special provision for invalids and diabetics.

Transfer of Medical Staff to Reception Areas

Mr. David Adams inquired on November 9 whether instructions had been given by the Ministry on the number or proportion of medical officers who should be transferred from evacuation to reception areas. Dr. Elliot said evacuation

authorities had been urged to assist the authorities in reception areas by the transfer of staff where the conditions in the reception areas called for additional staff. In view of the varying circumstances in such areas it would not be practicable for him to lay down definite figures.

Hospital Accommodation for Civilians

Dr. ELLIOT, who was asked by Mr. Crowder on November 9 to consider authorizing the immediate reopening of London hospitals for the treatment of civil sick on a much larger scale than at present, replied that an inquiry made by him on November 6 showed that the nine big London hospitals—the London, St. Bartholomew's, University College, Middlesex, St. Mary's, Westminster, St. Thomas's, King's College, and Guy's Hospitals—all had vacant beds available for the ordinary needs of the population. He was, however, carefully examining, in consultation with the governing bodies and their staffs, what steps were possible to increase the facilities and beds available at the central hospitals.

In a further reply on November 9 to Mrs. Adamson, Dr. ELLIOT said that in maternity hospitals, sanatoria, general hospitals, and mental hospitals in evacuation and in other areas no beds were taken over or requisitioned for casualty cases. Before the war an estimate was made of the beds which could be made available at each institution in the scheme by relying on those normally empty, by sending home convalescent patients, and by transferring others to simpler accommodation, and in many cases additional beds were supplied by the Government for use in an emergency. The returns made to him daily since the outbreak of war did not enable him to say which of the beds vacant at any institution represented existing beds freed for the reception of casualties and which additional beds supplied by the Government. In the aggregate 110,000 out of the 170,000 vacant beds in hospitals rendering returns were additional beds supplied by the Government, and 60,000 were the original beds, including those which would have been empty in any case. The additional beds were being steadily increased as hutted accommodation was completed. In the same hospitals the number of beds occupied by the sick was shown in their returns as 156,000. The vacant beds were available if necessary for the sick requiring in-patient treatment as well as for casualties. In maternity hospitals no beds had been regarded as reserved for casualties. Casualty accommodation in mental hospitals had been provided entirely by beds supplied by the Government.

In-patient Treatment at London Hospitals

On November 9 Dr. ELLIOT informed Dr. Howitt that at the beginning of the war about 8,000 hospital beds in the county of London were evacuated by sending patients either to their homes or to other institutions. In addition there were about 7,500 beds already vacant, making 15,500 in all. At the present time there were in these hospitals about 13,000 vacant beds available not only for casualties but also for the civilian sick, who were admitted to the hospitals if in need of in-patient treatment. A letter was recently sent to London hospitals on this subject.

Dr. HOWITT asked whether sufficient physicians, surgeons, and specialists had returned to London to enable hospitals to deal with the civilian population. Dr. ELLIOT replied that adequate medical and nursing personnel was available for the cases at present coming forward. He had under consideration further proposals made to him by a committee representing all sides of the profession.

Infant Welfare Centres in London

Dr. ELLIOT informed Dr. Howitt on November 9 that infant welfare centres were open in the majority of the metropolitan boroughs. The reopening of further centres was a matter in the first instance for the responsible welfare authorities, acting in the light of their knowledge of local needs and of the facilities available in their areas. Dr. Elliot added that he was aware of the importance which mothers attached to being attended by medical practitioners in whom they had confidence.

Criminal Justice Bill

Sir SAMUEL HOARE announced on November 9 that the Government had regretfully decided time could not be found for the further stages of the Criminal Justice Bill. The Bill could not be carried over to another session, but he hoped that in some early session a Bill of the same kind would be introduced and passed without delay.

Service Allowances for Children

In the House of Commons on November 14 Mr. HORE-BELISHA announced an increase in the Service allowances. He said that the rates of allowances for children, after the first child, would be: 4s. for the second child against 3s. in the past, and 3s. each for all other children instead of 2s. for the third and 1s. each for subsequent children. Payment of the increased allowances would begin in three or four weeks' time, and would be retrospective to November 13 or the nearest related pay day.

Midwives and the Emergency Hospital Service.—Dr. ELLIOT told Mrs. Adamson on November 9 that no midwives or district nurses practising as midwives had been called up for service in emergency hospitals, since they were not enrolled as such in the Civil Nursing Reserve, from which nursing staff for hospitals under the Emergency Hospital Scheme was provided. Some nurses who possessed the certificate of the Central Midwives Board had been enrolled and called up. A number of midwives had been transferred from evacuation to reception areas for service in emergency maternity homes, which, according to the returns received, were adequately staffed.

The Position of Dentists.—Mr. GROVES asked the Secretary of State for War if he was aware of the serious hardships experienced by dentists at present, and if he would consider devising a scheme by which the services of civilian dental practitioners could be utilized by the Army Dental Corps. Mr. HORE-BELISHA said that the Army Dental Corps had already absorbed a number of civilian dental surgeons, who had been appointed to commissions since the outbreak of war, and many more would be required as expansion proceeded. The arrangements for the supply of dentists both for the Services and for civilian requirements were in the hands of the Central Dental War Committee, which included representatives of the profession.

Notes in Brief

The establishment of a first-aid post includes one trained nurse. Dr. Elliot does not feel in a position to recommend the enlargement of this establishment.

Asked about treatment facilities at present available at Droitwich, Dr. Elliot stated that vigorous efforts were being made by all concerned to ensure that these facilities would continue to be available to all those in need of such treatment.

Universities and Colleges

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council, held on November 10, the following appointments were made: Dr. J. B. H. Holroyd to be temporary lecturer in anaesthetics and Mr. J. Hardman to be temporary honorary lecturer in surgical anatomy, to carry on the duties respectively of Dr. R. E. Pleasance and Mr. J. C. Anderson, who are on military service; Dr. W. F. Mindham to be part-time demonstrator in anatomy for the session 1939–40: Professor H. N. Green and Professor E. J. Wayne were appointed two of the five representatives of the University on the Committee of Management of the Sheffield Hospitals Council.

The Council received and accepted with regret the resignation of Dr. Lucy Naish of the post of lecturer in osteology, and accorded its thanks to Dr. Naish for her services.

UNIVERSITY OF GLASGOW

At a ceremony of graduation on November 11 the degree of M.D. (with commendation) was conferred on P. K. Fraser (*in absentia*).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary meeting of the Council was held on November 9 with Mr. Hugh Lett, the President, in the chair. Mr. R. St. Leger Brockman of Sheffield was readmitted to the Court of

Examiners for a period of five years. The scientific report of the College for the year 1938–9 was approved and adopted.

Final Fellowship Examination

The Council decided to hold an additional Final Fellowship Examination in February, 1940. The Council recognizes that it may be difficult for some candidates to comply with the regulations for admission to the Final Fellowship Examination. It has been resolved therefore that those candidates who because of war work have been unable to comply with the regulation that requires six months' residence as house-surgeon in a recognized hospital may apply to the President, through the Director of Examinations, for special permission to enter for the examination. With his application a candidate must submit a certificate from his commanding officer giving (*a*) particulars of his appointment in the Navy, Army, or Air Force, (*b*) the dates of his service with the unit, and (*c*) an indication of the nature of the duties performed by him during such service. A candidate in the Emergency Medical Service or in a civil hospital should furnish similar particulars signed by the senior surgeon of the hospital in which he may have held the appointment.

Licence in Dental Surgery

Sundry alterations in the regulations for the Licence in Dental Surgery were agreed to. Details of the alterations have been sent to the medical and dental schools. Provisional recognition was granted to the Dental Faculty of the Punjab University so that graduates of the Faculty may be admitted to the Final Examination for the Licence in Dental Surgery on completing six months' general medical and surgical hospital practice in this country.

Grant of Diplomas

Diplomas of Membership were granted to the 297 candidates whose names were printed in the report of the meeting of the Royal College of Physicians of London published in the *Journal* of November 4 (p. 930), and to P. J. Crowley, A. M. Goldthorpe, Joyce S. Miller, and Aileen E. M. Whetnall.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a quarterly meeting of the Royal College of Physicians of Edinburgh, held on November 7, with Dr. Alexander Goodall, President, in the chair, Drs. David Dowie Dunn (Capetown), Jiwan Ram Maleri (Punjab), Beatrice Annie Sybil Russell (Gold Coast), George Robertson McNab (Birmingham), Philip Wolfe McKeag (Bath), Robert Patrick Anderson Macaulay (Trentham), and Harry Winton Dryerre (Edinburgh) were elected Fellows of the College.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the annual meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on November 6, the following officers were elected for the ensuing year: *President*, Dr. J. Souttar McKendrick; *Visitor*, Mr. Roy F. Young; *Honorary Treasurer*, Mr. William J. Richard; *Honorary Librarian*, Dr. W. R. Snodgrass; *Representative on General Medical Council*, Mr. G. H. Edington.

Medical News

The B.B.C. announces that on November 23 at 4.15 p.m., in the series "Talking it Over," a medical psychologist will discuss "States of Mind"; and that "physical exercise" broadcasts will be inaugurated on December 4, starting at 7.35 a.m.

It has been decided that the annual course of lectures and practical instruction for a Diploma in Psychological Medicine held at the Maudsley Hospital, Denmark Hill, S.E.5 (London County Council and University of London), will begin as usual on January 1, 1940. War conditions call for some changes in arrangements, but the clinical instruction necessary to satisfy the requirements of the various examining bodies will be provided. A notice of the course will appear later in the advertisement columns of this *Journal*. Inquiries should be addressed to the Honorary Director of the Medical School, The Central Pathological Laboratory, West Park Hospital, Epsom, Surrey.

The Copley Medal of the Royal Society has been awarded to Professor T. H. Morgan of the California Institute of Technology for his establishment of the modern science of genetics; and the Davy Medal to Professor J. W. McBain of Stanford University, California, for distinguished work in the study of colloidal electrolytes. A Royal Medal has been awarded to Professor D. Keilin, F.R.S., for his contributions to biochemistry and entomology; in particular for his demonstration of the part played by cytochrome in the oxidation-reduction mechanisms of the living cell; and for his studies of the higher Diptera.

Among four recipients of gold keys from the American Congress of Physical Therapy for distinguished research in physical therapy during the last year is Dr. J. B. Mennell of London. The award was made during the same month that Dr. Mennell took up his duties as president of the Section of Physical Medicine of the Royal Society of Medicine. This is the fourth occasion on which one of these keys has been awarded to a medical practitioner in this country; the last was to Sir Henry Gauvain in 1936.

The Institute for the Scientific Treatment of Delinquency announces that it has now been found practicable to reopen the clinic at 8, Portman Street, W.1, and applications may be made either by letter or telephone to the secretary. For the present the work of the clinic will be restricted to diagnosis and advice (including social work and disposal), but the directors are endeavouring to arrange for psychological treatment to be given in Central London. Arrangements are also being made for diagnosis and treatment in certain districts outside London.

The issue of *Nederlandsch Tijdschrift voor Geneeskunde*, the organ of the Dutch Medical Association, for October 21 contains a sympathetic obituary notice of Dr. Harvey Cushing by Dr. P. Brouwer, professor of neurology at Amsterdam, and two portraits, one in his study and the other in a group of Dutch peasants at Amsterdam.

The October issue of the *Psychiatric Quarterly* is dedicated to Dr. Robert Hutchings, who has retired after forty-seven years' service to New York State, and for the last four years has been editor of the journal.

EPIDEMIOLOGICAL NOTES

Infectious Diseases for the Week

There has been a tendency in recent weeks for the incidence of diphtheria to increase, but in none of the localities affected have outbreaks attained epidemic proportions. In England and Wales notifications in the last four weeks were: 952, 941, 975, and 1,002 (week under review), and there has been a corresponding rise in the number of deaths from diphtheria; but the numbers notified each week have been below those recorded in the corresponding week of 1938. On the other hand, the number of deaths certified has in the last few weeks approached that for last year, suggesting that the disease is present in a more severe form. In Scotland and Ireland considerable fluctuations in diphtheria prevalence have been observed during the same period and no definite trend is discernible. Similarly, notifications of scarlet fever have varied from week to week—in England and Wales as well as in Scotland and Ireland. The usual seasonal trend has probably been disturbed by the abnormal distribution of many of the susceptibles and the varying conditions in different localities as regards reopening of schools.

The figures for pneumonia (primary and influenzal) in England and Wales have in the last four weeks increased irregularly, and there has been a steady rise in the deaths from influenza, although the numbers are still low.

The abnormal prevalence of dysentery in Scotland, principally affecting Edinburgh, continues. Notifications for the whole country were 52, compared with 39 in the previous week and 23 in the corresponding week last year. Of the 52 cases notified, 22 were in Edinburgh, 5 in Dundee, 4 in Glasgow, and 3 in Aberdeen.

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INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended October 28, 1939.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for : (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases ; a blank space denotes disease not notifiable or no return available.

Disease	1939					1938 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	25	1	6	1	—	19	2	4	1	2
Deaths		—	—		1		—	—		
Diphtheria	1,002	40	205	50	43	1,432	153	274	81	26
Deaths	26	1	6	2	2	27	5	3	5	—
Dysentery	47	3	52		—	39	23	23		—
Deaths			2	—	—			—	—	—
Encephalitis lethargica, acute	2	—	—	1	—	2	—	—	1	—
Deaths		—	1				—	1		
Enteric (typhoid and paratyphoid) fever	32	1	4	9	2	19	1	7	3	3
Deaths	3	—	—	—	—	—	1	1	—	—
Erysipelas			79	10	4			81	3	7
Deaths		—	2		1		2	—		
Infective enteritis or diarrhoea under 2 years										
Deaths	34	2	17	7	2	45	10	9	11	2
Measles			6		18		22	8		2
Deaths	1	—	—	—	—	1	—	—	—	—
Ophthalmia neonatorum	73	4	22		2	87	9	35		—
Deaths										
Pneumonia, influenzal*	543	36	3	1	1	578	65	11	2	19
Deaths (from influenza)	28	2	2	—	—	22	4	1	—	1
Pneumonia, primary			139	9				229	9	
Deaths		7		10	3		14		11	6
Polio-encephalitis, acute	6	—				4	1			
Deaths		—					—			
Poliomyelitis, acute	21	1	—	—	—	70	4	3	1	—
Deaths		—	—				1	1		
Puerperal fever	1	1	9	4	—	3	3	19	2	—
Deaths		—					1†			
Puerperal pyrexia	137	4	29		3	183	17	31		—
Deaths										
Relapsing fever	—	—			—	1	—			—
Deaths										
Scarlet fever	1,336	19	237	61	99	2,000	192	411	92	93
Deaths	3	—	1	—	—	2	1	—	—	—
Small-pox	—	—	—		—	—	—	—		—
Deaths		—	—	—	—		—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths			—	—	—			—	—	—
Whooping-cough			11		1		146	178		9
Deaths	3	—	—	—	—	5	—	2	—	1
Deaths (0-1 year)	274	23	66	29	13	258	35	45	32	13
Infant mortality rate (per 1,000 live births)						43	29			
Deaths (excluding stillbirths)	4,639	725	681	173	139	4,226	834	556	178	121
Annual death rate (per 1,000 persons living)			13.8	11.6	12.2	10.4	10.6	11.3	12.1	10.7
Live births	5,520	637	905	373	235	6,247	1,116	828	343	228
Annual rate per 1,000 persons living			18.3	25.1	20.6	15.3	14.2	16.9	23.2	20.2
Stillbirths	238	18	39			250	31			
Rate per 1,000 total births (including stillborn)			41			38	27			

* Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.
† Death from puerperal sepsis.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone 24361 Edinburgh), and of the Office of the Cumann Doctúirí na h-Éireann (I.M.A. and B.M.A.), 95, Merrion Square, W., Dublin (telephone 62550 Dublin).

QUERIES AND ANSWERS

Parotid Swelling in an Infant

Dr. COLIN H. HARPER (Kenilworth) asks if any reader has met a case similar to that recorded below and can offer a prognosis: The patient is a female infant born September 1, 1939, who has had for the past five weeks a painless parotid swelling on the left side which refuses to resolve or alter in any way. The tumour is soft but does not fluctuate, and the overlying skin is normal. The child was full-term and a breech birth, and was quite healthy for the first fourteen days, at which time she developed an extensive white mouth. The mouth condition cleared up with coll. argentum after a week and was followed by the parotid swelling. The baby is making good progress on artificial feeding and is otherwise quite normal.

Foot Powder for Soldiers in Rubber Boots

"REGISTERED MEDICAL AUXILIARY" writes: In many cases those serving in the Army are required to wear rubber Wellingtons for several hours daily, and in some instances with deleterious effect, such as skin surface sensitiveness, congestion, liability to blister, etc. Sponging with methylated spirit is often advised with advantage after a footbath in which potassium permanganate is used. An authoritative pronouncement in regard to a suitable astringent powder, which could be dusted into the socks for use while wearing these rubbers, would be of great service to those who are anxious to help the feet of our soldiers.

Fractured Femur in the Field

"D. W." writes in reply to Dr. W. R. Wilson's inquiry (October 28, p. 896) regarding a method of treating fractured femurs in the field. This method was fully described (and illustrated) in a paper on field ambulance training which appeared in the *Journal of the Royal Army Medical Corps* of March, 1939. The writer (Major J. B. Fotheringham) stated that his attention was first drawn to this method in the last war by a brother officer who produced a cutting from a medical journal. This must have been Captain Chavasse's description in the *British Medical Journal* referred to by your correspondent. After this it was used in the field ambulance with which the writer was serving. He has taught the method in peace time. I myself while a Territorial D.A.D.M.S. introduced the method into the field ambulances of my division. Dr. Wilson states that extension is maintained by means of a strap passed between the legs and fastened to the head end of the stretcher. It is better (and more comfortable for the patient) to maintain extension from the shoulders. A triangular bandage is tied in a half-knot round each shoulder-joint over a pad in the axilla and the ends are fastened to the handle of the stretcher on the opposite side.

Income Tax

Deduction of Tax from Interest

"H. P." explains that he has a mortgage on some property, the interest being payable on April 1 and October 1. He has recently received the interest less tax at 8s. 6d. in the £. Is this correct?

*** No. The interest being secured on property is presumably "payable out of profits and gains brought into charge," and tax is deductible at the rate in force for the year in which it falls due. If the interest had been payable on April 6, etc., the rate for the year would be 7s. in the £, and as 5s. 6d. only was deducted in April 8s. 6d. would now be deductible to produce an average of 7s. But the April interest was taxable at last year's rate—that is, 5s. 6d.—and not at 7s., and therefore no special adjustment can properly be made from the October payment, which is taxable at 7s. only.

LETTERS, NOTES, ETC.

Safely Swallowed Safety-pin

Dr. D. S. BRYAN-BROWN (London, N.16) writes: On October 18 I was called to see a boy 23 months of age who for three days had refused to eat. His temperature was subnormal. There were signs of erupting molars and his submaxillary lymphatic glands were palpable. The tonsils were within normal limits. The parents were reassured. On October 26 I was sent for in a hurry as the child had passed a 1½-inch open safety-pin. The child is perfectly well and has remained so up till now. It seems remarkable that a sharp-pointed foreign body of this size should pass through the alimentary canal of such a small child with impunity.

Accommodation for Medical Boards

"MEDICO" writes: May I, as a member of one of the Military Service Act medical boards in London, draw attention to the unhealthy conditions under which the members of some of these boards are expected to work. Surely there should be plenty of suitable premises such as hotels and other buildings available for the purpose. As it is, a converted shop with practically no ventilation, no running water for washing or testing urine, and a stifling temperature often over 70° is the accommodation set aside for some boards. To ask medical men and other staff to work under such conditions is surely not fair and is uneconomical, because in an influenza epidemic most of the staff would be down sick. I hope that all premises will be surveyed with a view to their alteration or transference of the work to more suitable buildings.

Information for the Deaf

The National Institute for the Deaf (105, Gower Street, W.C.1) has issued a handbook entitled *All about the Deaf* (price 3s.; 3s. 3d. post free), which describes how the deaf are helped and how they may help themselves. It was first published in 1929 as *The Problem of the Deaf*. This volume of 125 pages gives trustworthy information on every aspect of deafness, and should be of great service to all those concerned with this subject. The two classes of patients whose interests are considered in the book are the "deaf and dumb" and the "deafened"—that is, those who were not born deaf but have acquired their hearing defect at some time since birth. The book includes articles on the legal aspects of deafness, the certification of mental defect in the deaf, the prevention of deafness, the education of the deaf and dumb, the use of hearing aids, and schools for the deaf; it also reminds the reader that the National Institute for the Deaf maintains a list of firms which have agreed to certain conditions in the sale of hearing aids to the public. Among much other valuable information there is also a list of hospitals in Great Britain where diseases of the ear, nose, and throat may be treated. The National Institute for the Deaf, in conjunction with the Department of Industrial Physiology of the London School of Hygiene and Tropical Medicine, has also issued a valuable report on *Employment of the Deaf in the United Kingdom*, by Miss M. L. Clark and Dr. G. P. Crowden.

"Foreign Pharmaceutical Products"

MESSRS. COATES AND COOPER, Ltd., Clerkenwell Road, E.C.1, write: We note that in your issue dated October 28 you have incorporated under the heading "Foreign Pharmaceutical Products" the preparation idozan. We would like to draw attention to the fact that idozan has been manufactured in this country for some considerable time, and in October, 1938, a half-page advertisement to this effect appeared in your *Journal*.